THE STANDARDISATION OF REQUIREMENTS. *See p.* 489.
BRITISH SEA-GOING REINFORCED CONCRETE BARGE (Illus.). *See p.* 492.

P Tech S

SHIPBUILDING AND SHIPPING RECORD

A JOURNAL OF SHIPBUILDING, MARINE ENGINEERING, DOCKS, HARBOURS AND SHIPPING

LONDON: Queen Anne's Chambers, S.W. 1.
GLASGOW: 87, Union Street.
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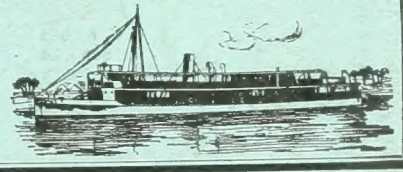

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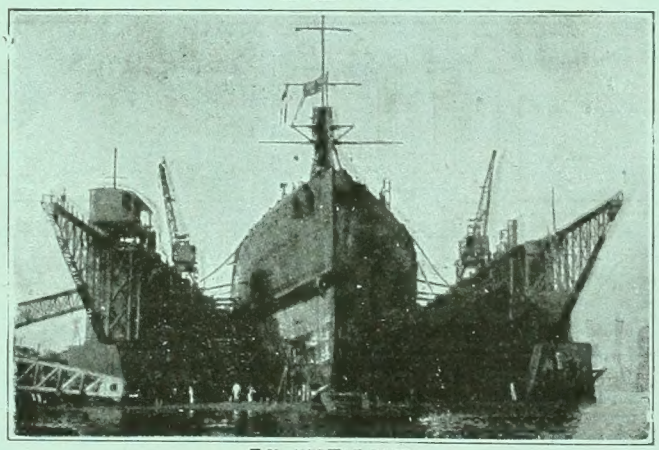

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PUBLISHED EVERY THURSDAY AT
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Branch Offices—
GLASGOW: 87, UNION STREET. NEWCASTLE: LLOYDS BANK CHAMBERS.
NEW YORK: WOOLWORTH BUILDING.

Telegraphic Address: "RECORDSHIP, VIC., LONDON."
Telephone No.: 2247, VICTORIA.

Subscription, including regular weekly and special issues, published from time to time, payable in advance and postage free:—

British Isles	£1 5s. 0d.
Elsewhere	£1 12s. 0d.
Single Copies	Sixpence.

The Editors will be glad to consider articles and paragraphs submitted by competent writers. All accepted contributions will be paid for. Whilst every care will be taken to return unsuitable articles, photographs and drawings (when a stamped addressed envelope is enclosed for that purpose), the Editors cannot hold themselves responsible for the safekeeping of unsolicited contributions.

VOL. XI.] THURSDAY, MAY 2, 1918. [No. 18.

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WE make no apology for again referring so soon to the question of British interests in the South Seas, and for the reason that developments in this connection appear now to be making some progress. As has already been indicated in these columns, there is a growing feeling throughout Australasia that the attitude of the Imperial Government on the subject is not quite so definite as it might be. An Inter-State Commission has reported to the Commonwealth Administration, and, among other things, it declares that the British Crown's control of the islands is lacking in cohesion and unity of policy. It also recommends a conjoint inquiry by representatives of Great Britain, Australia and New Zealand, to ensure a timely settlement of the future of the New Hebrides, as to which negotiations were proceeding with France before the war began. At that time, indeed, the French Government displayed great activity in the Pacific. Moreover, the Messageries Maritimes made arrangements to place larger steamers on the route, whilst a new line was instituted by the Compagnie Navals de L'Oceanie with a round-the-world itinerary. There is now, however, every reason to believe that an agreement is possible with France for the termination of the Condominium in the New Hebrides, which, if brought about, would give great satisfaction to both Australia and New Zealand. Meanwhile, there are other interests to be consulted. Japan, which has concluded a contract with the Nippon Yusen Kaisha for a regular service to and from the ex-German Possessions now in Japanese military occupation, is anxious to develop her trade in that part of the world, and is already encouraging Japanese emigration to the islands. Holland, too, evidently desires to make the most of her opportunities in the South Seas, and the United States also has of late extended her trading interests there. It must not be overlooked that the opening of the Panama Canal has brought the islands of the Pacific Ocean in general much nearer the markets of the Eastern Coast of the Americas. Whatever happens, however, there is a quiet determination not to allow Germany to again revert to her former occupation of the groups that were once under her control. If this is allowed, there is sure to be trouble.

Great Britain and the South Pacific.

Like other trades which rely on metals, the shipbuilding industry is dependent on the Ministry of Munitions for supplies of raw material. Mr. Churchill's graphic narrative on the work of his Department, made in the House of Commons, naturally, therefore, dealt with the steel position. He was able to say that for the last six months the shipyards have been supplied with steel plates and other shipbuilding materials to the fullest possible extent. Indeed, he stated that the Department has at present to slow down deliveries to the yards. We are told by the Minister of Munitions that our yearly production of steel is now nearly half as much again as it was in times of peace, and that the programme of rolling-mill production initiated by his predecessor is yielding a steady, substantial output. These results have been achieved in the face of very formidable obstacles. Ore shipments have been reduced by restriction of tonnage. Labour has been scarce, and organisation and development of home sources of supply have had to be brought about. The transformation of industry from a peace to a war basis has not been accomplished without mistakes and extravagances. Some of these were not necessarily inevitable. But it is an achievement of which the country may be proud that the losses in material and guns in France have been more than made good. It will be a happy condition, if all the steel which is required by the Armies and by the shipyards is continuously forthcoming.

Steel for Shipbuilding.

Shipowners have long felt the injustice of the meagre amounts allowed for depreciation of ships in the computation of income-tax by the Inland Revenue authorities. The question of these allowances in regard to industry as a whole will, no doubt, be urged upon Parliament for the purpose of review, when the war comes to a conclusion. The present methods of dealing with depreciation and obsolescence are not in harmony with modern industrial usages. We observe an interesting entry in respect to shipping in a memorandum which has just been issued by the Board of Inland Revenue. It gives the rate of depreciation on steamships as 4 per cent. on the prime cost, and 3 per cent. on sailing vessels. An important statement is added regarding the arrangements recently made respecting ships purchased at second-hand prices in excess of the written-down value at the time of purchase. In this case the allowance for depreciation is made on the actual cost price of the ship to the owner for the time being, without regard to the prime cost to a previous owner. Further, the rate of depreciation allowable is calculated by reference to the reasonable expectation of the life of the ship at the date of purchase from the previous owner.

Depreciation Allowances for Ships.

It is not often that an owner changes the basis of his insurances during the currency of his policies. It is therefore noteworthy that such an occurrence has recently taken place. The fleet concerned is not unimportant, and the values involved are large, therefore the financial adjustment made necessary by the transaction deals with a considerable sum of money. The method adopted for the transition in this case is to endorse the policies to the effect that

Changing Insurances.

on and after a certain date the policy, hitherto on an "all risks" basis, shall be subject to the "free of particular average absolutely" clause, a copy of which is attached to the document. The endorsement also states the rate at which the new insurances are effected, and the financial adjustment is made by a return being collected which represents the difference between the two rates. It would perhaps have been simpler to have cancelled the "all risks" policies outright, and to have made out fresh policies on the "free of particular average absolutely" basis, but this matter is of no great importance. The effect of the change will be that the owners now run the risk of heavy weather damage entirely, and a certain portion of the risk in strandings, fires and collisions, while they are covered against general average sacrifices, collision liability under the Running Down Clause, total loss and salvage charges.

Insurance Legislation in Hong Kong.

Since writing of the new Canadian Insurance Laws under the title of "Limitations of the Insurance Market" last week, details of a similar scheme which is being instituted by the government of Hong Kong have come to hand. It is openly stated that the new law aims at the prevention of irresponsible premium snatching, and the method employed is very similar to that of which we wrote last week. A deposit of $100,000 in Hong Kong currency or its equivalent is demanded for each line of insurance business undertaken. Half of this amount is to be deposited in approved banks in either cash or British, Indian or Colonial Government Bonds, or in securities authorised for the investment of trust funds in the United Kingdom, the other half may be in any other security approved by the Governor in Council. All securities must be transferred to the Registrar of Companies for the purposes of the Act, but where companies operating in Great Britain or in the Straits Settlements have already made deposits, they are free from making deposits to the amount of the existing deposit. The law further demands accounts to be audited by approved auditors, and penalties are provided for the falsification of these accounts and for other irregularities. It would seem that the legislation in question is an excellent example of level headed foresight, nor must it be imagined that the business to which it applies is of small importance. A large amount of valuable merchandise is locally insured, even though the business eventually comes to London in the form of re-insurance. It is significant that the necessity for such legislation is being recognised in such divers parts of the world, and it is high time that the London market took steps to obtain similar protection.

Japanese Shipping and British Trade.

While the shortage of tonnage in this and in most allied countries is too well known to need mentioning, it will come as a surprise to most people to learn that it has been brought to the notice of British owners that there is a certain amount of Japanese shipping available for ordinary trade purposes. Such, however is the case according to the financial correspondent of *The Times*, who further asserts that the suggestion has been made that possibly some of the Japanese owners would be willing for part of this tonnage to be employed in existing services. If so, there is reason to believe that British owners would be glad to load the vessels. The British owners are in the position of having a number of old-established and highly organised trades supported by many contracts; but owing to the pressing demand for tonnage in direct war service, they are unable to maintain the lines on any scale even approximating to those provided before the war. The Japanese lines would be the first to appreciate that co-operation in the manner indicated would naturally be far more acceptable to British lines than the establishment of entirely new services, such new services not touching Japanese ports, and by such co-operation the Japanese would be rendering yet another real service to the Allied cause, and incidentally they would be assured of very profitable employment for their vessels.

The Future of British Trade.

It is an obvious truism that the property of the allied industries of shipping and shipbuilding are dependent upon the prosperity of the general trade of the country. Shipowners and shipbuilders will, therefore, be deeply interested in the final report—which has just been published—of the Committee appointed by Mr. Asquith in July, 1916, on Commercial and Industrial Policy after the War. Many important recommendations for the promotion and safeguarding of British trade are made in the report, and it is of interest to note that there are resolutions in favour of the principle of Imperial preference. The Committee in the introduction to the report point out that a permanent improvement in our industrial and commercial position after the war can only be obtained from better organisation of the trades concerned. The main object of the report is to lay down the general lines of policy on which permanent provision should be made in the light of the experience of the war for safeguarding and promoting British industry and commerce in the future. Shipping policy is not dealt with, but it is recommended that the Government should consider specially the whole shipping position as soon as it receives the report of the Departmental Committee of the Board of Trade on the subject, and a suggestion is made that, while it may be desirable to restrict for a period the use of British ports by German shipping, any policy which would tend to check the use of our ports by foreign shipping generally would be inexpedient.

Shipping after the War.

Lord Balfour's Committee in its report, dealing with the commercial and industrial policy which this country should adopt after the war, deliberately refrains from dealing with shipping. The reason assigned is that the Departmental Committee on Shipping and Shipbuilding has not completed its investigations. We do not see how Lord Balfour's Committee could have touched authoritatively on that important branch of national trade in these circumstances, but the Government is recommended specially to consider the position of shipping as soon as the report is received from the departmental Committee. Lord Balfour and his colleagues, however, state their view that whilst it may be desirable to impose for a limited period some restriction on the use of British ports by present enemy shipping, any policy which may tend to check the use of our ports by foreign shipping generally would be inexpedient. We can imagine circumstances where a retaliatory policy against us would have inconvenient consequences if we were shortsighted in this matter. We may note that a recommendation of the Departmental Committee on the Coal Trade is cited to the effect that the policy of this country should be directed to maintaining, and, if possible, extending the export trade in coal. That is of utmost importance to shipping. This industry cannot be indifferent to the broad general conditions affecting commerce and trade which are handled with exhaustive care by Lord Balfour's Committee. To increase production and get rid of State control is recognised as vital to our commercial position.

The State and its Ships.

It is suggested that it would not be a bad idea for the Government to offer to sell to the highest bidder a number of the merchant ships which it has built or purchased since the outbreak of war. The vessels could be sold, it is said, as requisitioned, and would in all probability be purchased by shipowners whose fleets have suffered heavily through enemy action or the abnormal wastage of service during the war period. The gain to the Government would, of course, be that it would get the use for other purposes of the money which is now in State-owned ships. The financial arrangement of the proposed deal would necessarily be extremely

difficult. But the difficulties would not be insuperable if a sound reason were found for putting the project through. The best claim advanced to date by the advocates of it is that it would restore confidence in British shipping, partly by putting owners in possession of more tonnage for after-war use than would be the case otherwise, and partly by convincing investors that it is not the intention of the State to stay in shipping. It seems to us, however, that, at any rate, one important consideration is overlooked. If the Government sought in this particular way to restore confidence in shipping it would run the risk of estranging public opinion, for the first inclination of the man in the street would be to call the deal another concession to "the profiteers." An easier way to restore confidence in British shipping would be to make an authoritative declaration of the State's intentions with regard to the industry.

Conservative Boilermakers.

Considering how short the shipbuilding industry is of operatives capable of doing skilled men's work, the attitude of one or two district committees of the Boilermakers' Society is difficult to understand. "Several complaints have reached us," says one, "of helpers being allowed to take down and put up plates, and it seems to be a growing practice on piecework. We give this word of warning to our platers that should any further complaint come along we shall deal with the plater for allowing this change of custom to be introduced. The same applies to screwing up, and if allowed to go on it is feared our members will not be wanted." Another reports the decision of a mass meeting to "allow" holders-up to work oxy-acetylene machines with other sections of the boilermakers' trade, provided no two holders-up work together. Previously, holders-up had been barred absolutely. Nobody denies the right of craftsmen in normal times to protect their crafts, but if craftsmanship is the test, this sort of thing is ridiculous. The helpers must be quite competent to do the work indicated in the first of the cases mentioned, or the pieceworking platers would not allow them to do it. Similarly, holders-up must be able efficiently to use the blowpipes or they would not be allowed to touch them at all. Obviously, skilled men do themselves no good by claiming jobs which less skilled men can do. But the point of this note is that as the effect of their conservatism must be at the moment to slow down the progress of repairs their action is not very patriotic.

A Hamburg Delusion.

The position of the German shipping industry is accurately expressed by Herr Huldermann in his article in the *Hamburger Fremdenblatt*, to which we alluded last week. Teuton shipowners will need much more than the grants authorised by the Reconstruction Act in order to restore their fleets, and because of the length of time it will take the Fatherland's shipbuilding industry to make good the tonnage deficiency their capital expenditure will be unprofitable. At the time the war ends immense shipbuilding industries will be in operation here and in the United States, and the resources of neither will be, we may be sure, available to our enemies. Before the outbreak of hostilities Herr Huldermann was generally regarded on this side of the North Sea as a shrewd man of business in very full enjoyment of the confidence of Herr Ballin. Presumably he is still in the confidence of the head of the Hamburg-Amerika Line. His shrewdness seems, however, to have declined, for it is his opinion that the most promising means of meeting the great need of German shipowners for capital is to require full indemnity from the enemy for all lost vessels. If Herr Huldermann's shrewdness had continued at its pre-war level he would not have written like that. "The enemy" has a formidable tonnage account of his own to render which, when it is rendered, will make Herr Huldermann sorry he spoke. Hapag's leading lights may understand the people of Hamburg, but they are quite clearly densely ignorant about the inhabitants of these islands.

The "St. Paul."

The "fool-proof" ship has not yet been constructed, and it is possible to lose the best of them by inattention to the laws which govern stability. No particulars have come to hand at the time of writing as to the cause of the capsizing of the *St. Paul*, but the stability of vessels in the light condition usually calls for special attention. Of late years, it has been customary to strive after a condition of positive stability in the light condition, without the use of water ballast, but when the *St. Paul* was built this point did not receive the consideration now given. In large liners, like the *St. Paul*, the range of stability is usually great, and instability at the initial angles of inclination quickly alters to positive stability as the inclination increases. Several factors may counteract this action—sidelights being left open and allowing the water to enter; loose water in the bilges rushing to the heeled side and accentuating the list; or, as has been suggested as being the cause of the disaster to the *St. Paul*, sea cocks being left open by carelessness or design. Although accidents of this kind are rare, they are sufficiently frequent to impress ship officers with the necessity of erring on the safe side, and keeping sufficient water in the double bottom to ensure ample metacentric height. When at sea a very low metacentric height may be desirable so as to ensure easiness of rolling, but when in dock there is no object to be gained by reducing the initial stability to a minimum. Accordingly a greater measure of stiffness should be given, so that effects of loose water, &c., which might have disastrous effect when a small metacentric height is afforded, might be nullified by the greater initial stability.

Gears for Reciprocating Engines.

The undoubted success which has accompanied the application of speed reduction gears to marine steam turbine installations, and the high efficiency which is obtained with these gears when they are carefully manufactured, raises the question whether it might not be an advantage to instal mechanical speed reduction gearing in conjunction with reciprocating engines of the internal combustion type. There is no question as to the advisability of using them in conjunction with steam reciprocating engines, as these can be most economically built to run at a speed of about 70 revolutions per minute, which is perhaps the most economical rate of revolution for the propeller of slow-going cargo vessels having a speed of about 11 knots. But with Diesel engines as now built it is found impossible to run these at such slow speeds, and a study of the Diesel engines built for cargo vessels would show that though the speeds vary considerably with different makers, it is always higher than that of the reciprocating steam engine, and usually between 150 and 300 r.p.m. It would appear then as if experiments are needed to determine what may be considered the most economical speed of high-powered Diesel engines, and then to build engines of this speed and instal gearing having a speed reduction of two or three to one so that the most economical propeller speed may also be employed.

Air Supply to Boiler Rooms.

In his valuable paper to the Institution of Naval Architects on the air supply to boiler rooms, an abstract of which was published in our issue of April 4, Mr. R. W. Allen shows by the results of experiments how necessary it is for every care to be taken in the design of air supply trunks in order to reduce to a minimum the losses in pressure which generally occur in practice. The author points out that one of the great sources of loss is that due to non-uniformity of cross-sectional area of trunk with resulting variations in velocity of air and attendant fluctuations in pressure. With abrupt enlargement in area, it is a well known law in fluid dynamics that the loss in pressure head will be at least proportional to the square of the difference in velocity through the two sections, and in changing suddenly from a larger to a smaller

area the loss is again proportional to the square of the velocity through the smaller area. It is therefore important that any necessary changes in area or shape of trunk should be gradual, in order to conserve the energy supplied by the fan. The importance of working with low velocities especially on the suction side of fan has been demonstrated by the author; high velocity of air on the suction side necessitates the creation of a high vacuum by the fan which reduces the available pressure on the discharge side for a given speed of blade tip. The limiting velocity in the air shaft recommended by the author is 25 ft. per second, which corresponds to a vacuum of about $\frac{1}{4}$ in.

THE GOVERNMENT'S SHIPBUILDING POLICY.

IT has always been recognised that one of the greatest advantages of standardisation lies in the fact that it permits the manufacturer to concentrate his attention on the minimum number of different kinds of articles, thus enabling him to take the fullest advantage of continued repetition. When it comes to the question of building ships, while it may be advisable for one yard to concentrate on a particular type of vessel, thus constituting this type its standard, it must be recognised that in view of the variety of the requirements, it would be obviously out of the question for a maritime country, even in times like the present when all efforts are directed towards one end, to be able to fix upon one particular type of vessel and thus to constitute this type its standard ship. Hence, whilst the Government is committed to a policy of standard ship construction, it has been found necessary, as stated by Sir George Carter at the Institution of Naval Architects, to build no fewer than six distinct types of standard ship; and in addition to this there are the "fabricated ships," which are said to be the type to which our "National" yards will be devoted. With the fact that it has been found necessary to concentrate on six different types of ship we are not disposed to argue. It is quite conceivable that a fewer number of types could have been adopted to satisfy requirements under the present circumstances, but considering the number of different types which were being built prior to the inauguration of the "standard ship" policy, it may be counted as an obvious improvement to have limited the number to six.

The majority of shipbuilders based their opposition to the Government scheme, not on the fact that they were desirous of building a number of different types of vessel, but that they were desirous of concentrating their attention on one type, in the production of which they had become expert and which differed but slightly from one or other of the Government standard types. They realised, however, that considering the output of the entire shipyards of the country, the production of plates, sections, castings, &c., it might possibly be advantageous in the national interest to give up their own particular design and concentrate their attention on a standard ship most nearly approximating to that with which they were familiar, and for this reason they willingly fell in with the Government's scheme and prepared to build the standard ship allotted to them. To concentrate on one suitable type would be standardisation in the highest degree. But unfortunately the Government were not content to let things remain thus, they required some of the yards to build vessels of more than one type, thus destroying in a large measure the advantage gained by the building of the standard vessel of one type.

Lord Furness, at the annual general meeting of Irvine's Shipbuilding & Dry Docks Company, Ltd., voiced the opinions of many shipbuilders when he adversely criticised this part of the Government's standard ship policy. After drawing attention to the fact that both of their shipyards were controlled establishments, and that in consequence they were not free to concentrate their energies upon the class of work which they would consider best suited for their yards, Lord Furness stated that during the past year they had built for the Admiralty vessels of distinctive types, and had had a large refrigerated meat carrying vessel under construction, in addition to an oil tanker, cargo liners, and standard ships, and considered that this variety of work had acted as a deterrent to the best results of output being obtained from their efforts. In his judgment the Government's policy of standardising certain types of vessels was a sound one, and one which must necessarily tend to hasten construction. In practice, however, the improved output thus obtained was largely discounted unless care was exercised to ensure, first, that each yard was given the class of vessel for the construction of which it was best adapted, and, secondly, that each yard was given vessels of a uniform type instead of being asked to build a number of standard ships, each one of a different size and design. At the risk of labouring the point, he gave it as his opinion—which he believed was shared by those best qualified to judge of such matters—that the policy of building special types of vessels in yards which may not have been particularly adapted for such specialised construction and alongside ordinary merchant vessels of the types of the principal standard ships, could only have the effect of retarding the whole of the output from those yards, and no advantage was gained in the construction of either one class or the other.

It is of interest to note the optimistic remarks of Lord Furness with reference to the future of the shipbuilding industry. After referring to the patriotism of the shipyard workers on the North-East Coast, Lord Furness added that with this encouraging spirit animating our shipyard workers he for one was not pessimistic, and he felt sure that the shipbuilding industry of this country need not fear eclipse, even by our American cousins, who were putting such tremendous energy into the vital task of building ships in the present emergency. As to the future, the rôle of prophet was a thankless one, and in any case in existing circumstances the future was hard to forecast. He could, however, say with confidence that there was a large volume of work awaiting the shipbuilding industry, and for some years to come it was certain that all their facilities would be kept fully occupied.

That the shipbuilding industry will flourish for many years after the cessation of hostilities is almost self-evident when one considers the depletion of tonnage which the war has entailed. But two factors will have to be considered before any definite ideas can be entertained, first the extent to which Government control will be maintained after the war, and second, the effect of the world-wide extension of shipbuilding facilities which were almost non-existent in pre-war days.

A SHIPBUILDING CONTRACT.

SOME aspects of the legal principles which the House of Lords has applied to a shipbuilding contract in the case of the New Zealand Shipping Company, Ltd. *v.* The Société des Ateliers et Chantiers de France are worthy of note. They may, we gather, be applicable to some other cases. The facts of the contract are briefly these. The French company undertook to build, at a price of £94,850, a vessel for the New Zealand Shipping Company, and complete her so as to be ready for trial on October 30, 1914. The failure to complete to time was to involve liquidated damages for each working day of delay, although a proportionate extension of time was to be allowed in case of interruption by strikes or other "unpreventable causes" If, however, the builders were unable to deliver the vessel within eight months of the agreed date, it was stipulated that "this contract shall become void," and all the instalments paid by the purchasers were to be repaid with interest. To these stipulations was added an important provision that in the event of France becoming engaged in a European war, then the limit of eight months should be extended to the duration of the war, but in any case the extension was not to exceed 18 months

In consequence of alterations in the design, the date of completion was extended by mutual consent to January 30, 1915. A European war, in which France became engaged, did, in fact, break out, and the builders were unable to complete the vessel either by January 30, 1915, or within the subsequent 18 months.

What, then, were the respective rights of the parties? The builders contended that the 18-months extension of time began to run on January 30, 1915, and, therefore, expired on July 30, 1916, and that the contract then became void in the absolute sense that it had been put an end to. The building owners, on the other hand, maintained that the 18 months did not begin to run until the builders were in default, on the expiry of the extension of time allowed in case of delay caused by "unpreventable causes." This provision, it was submitted, was quite independent of the clause relating to extension in time of war, and that so long as the "unpreventable causes" prevailed, the 18 months did not begin to run. Moreover, the building owners maintained that the contract was voidable at their option only. The umpire at an arbitration, and the Courts, including the House of Lords, have all upheld the contention of the builders that the contract became null and void on July 30, 1916. The Société des Ateliers et Chantiers therefore get the release which they have claimed.

It is well-established in law that if there is a positive contract to execute work, no unforeseen difficulties of performance or commercial impossibility will excuse its breach. There must be in the contract some explicit stipulation regarding the happening of some contingency—as there was in this case, the breaking out of a European war in which France should be engaged—to release one of the parties from his bargain. In these circumstances, of course, the word "breach" is inapplicable, because the result merely follows the provisions of the contract. It is undoubtedly competent for parties to stipulate that a contract shall be void upon the happening of an event over which neither of the parties shall have control. Neither of the parties in the present case had any control over the outbreak or continuance of the war. On the other hand, if the stipulation be—to use the language of Lord Atkinson—that the contract shall be void on the happening of an event which one or other of the parties can by his own act or omission bring about, then the party who by his own act or omission brings about that event cannot be permitted either to insist upon the stipulation himself or compel the other party, who is blameless, to insist upon it, because to permit the blameable party to do either would be to permit him to take advantage of his own wrong. But this does not deprive the blameless party of insisting on the stipulation that the contract shall be void on the happening of the named event. But these considerations do not govern the case we have been reviewing, although they have to be stated in order to distinguish it clearly. Here neither builder nor building owner is responsible. The conduct of neither has brought about the event. Each is innocent. "In such a case," observed Lord Shaw, "the contract is interpreted with even and equal justice to both sides, and the law does not allow one party only to avoid while the other is held bound. If both parties go on, that is another and their own affair. But either can claim that the contract is void, and then both are free."

THE STANDARDISATION OF REQUIREMENTS.

A DISTINGUISHED German shipowner once said sneeringly of the British mercantile marine that it was largely composed of cheap "tramps," forgetting, or ignoring, the fact that if what he said was true the belittled ships were highly economical units. By means of them British sea power was built up, and as the progress of this war to date proves there has been nothing like it since the beginning of navigation. All those who belittled the British cargo steamer were not, of course, Germans. Other rivals, holding the same economic views as the magnates of Hamburg and Bremen, made unfavourable comparisons from our point of view between the cheap British cargo boat and the comparatively dear, but less expensive to run, German or American or French cargo boat. Even our own shipowners on occasion severely criticised the tendency of the British shipbuilder to make his ordinary jobs as bare as possible.

Considering that the bareness of the average British "tramp" was a direct outcome of our people's preference for low first cost, the criticism of the United Kingdom's shipping experts was a little unreasonable. Not being in business for their health, shipbuilders had to produce ships which would sell, and the ships which sold were, they found, those which called for the minimum of capital expenditure. They could have embodied better economic proposals—have built, that is, vessels whose earning power per unit of capital expenditure was greater—but if they had done so they would for a certainty have been allowed to keep them. Owners would have taken their money elsewhere—in nine cases out of ten to some establishment famous for its "spec." boats—and made what they believed to be more profitable use of it.

In the light of what they said about the deficiencies generally of shipbuilders' boats it admittedly looks as if we take a risk in saying that they preferred the ship of low first cost to the more efficient ship of comparatively high first cost. But as a fact they showed such a preference. It is true that in adapting the low-priced tonnage to their needs or their inclinations many of them ran up considerable bills for extras. But it is equally true that they preferred to pay the low prices *plus* the extras rather than fully specify their requirements and pay adequately for their fulfilment. For proof of that there is no need to go further than the evolution of the cargo steamer itself, which is the due joint effect of (1) the British shipowner's peculiar economic policy and (2) the obligation of the shipbuilder profitably to carry on his industry.

Of course, we think no more highly of the "spec." boat than the shipowner does, moreover, we have never yet met a shipbuilder who was enthusiastic about it. As a rule, it lacks a good deal which, from the point of view of earning in working, it ought not to lack. There is, however, so great a variety in catalogues of its deficiencies in respect of fittings and equipment that sometimes we incline to think that the allegations about skimpiness and bareness are overdone. Much of the criticism seems to have its root in the likes and dislikes of individual owners and superintendents, and no better justification for the incorporation of particular details is sometimes apparent than that they are to be found in earlier vessels. In ships the tendency of detail to accumulate is very strong. The units of most of the world's important fleets show it, although in their case it is probably less pronounced than it is in the case of Admiralty ships—chiefly the vessels built for war.

It—or rather the cause of it—is assumed to be one of the strong arguments against standardisation. But, if the argument is examined a little more closely, will it not be found, that a great economic change for the better might be brought about by standardising shipping's requirements? The rejoinder usually made to suggestions of this character is that the world's ocean carrying is so varied that ships must be specially fitted and equipped for particular trades. That the statement is not so true as it looks the merchant marine's war service has generally speaking demonstrated. But in controverting it, the average man of progressive ideas will probably prefer to rely on the fact that in the case of the State's standard ships there has been a very considerable standardisation of requirements. No doubt, when ordinary owners buy their vessels from the State, they will proceed to adapt them to their own ideas of what ships of the kind should be. It is to be hoped, however, that the swing back will not be overdone, for if there is economy in standardised shipbuilding—and it is generally agreed that there is—it would obviously be well worth while to go fully into the question of simplifying and unifying the requirements for cargo vessels.

REGISTRATION OF GOVERNMENT SHIPS.

The following is the text of the Order in Council which appeared in the *London Gazette* of April 16, 1918, and states that the following Regulations shall come into operation forthwith as Provisional Rules in accordance with the provisions of Section 2 of the Rules Publication Act, 1893, and shall have effect as regards any Government ships in the service of the War Department :—

1. An application for registry of a Government ship in the service of the War Department shall be made in writing under the hand of the Secretary of the War Office. Such application shall contain the following particulars :—

(1) A statement of the name and description of the ship

(2) A statement of the time when, and place where, the ship was built; or, if the ship was foreign built, and the time and place of building are unknown, a statement to that effect, and of her foreign name.

(3) A statement of the nature of the title to the said ship, whether by original construction by or for the War Department, or by purchase, capture, condemnation, or otherwise, and a list of the documents of title, if any, in case she was not originally constructed by or for the War Department.

(4) A statement of the name of the master.

2. The Registrar, on receiving such application in respect of a Government ship in the service of the War Department, shall :—

(1) Enter the ship in the Register Book as belonging to "His Majesty, represented by the War Department," and shall also enter therein :—

(2) the name of the port to which she belongs;

(3) the particulars stated in the application for registration;

(4) the details comprised in the Surveyor's Certificate.

3. On the registry of a Government ship in the service of the War Department, the Registrar shall retain in his possession the Surveyor's Certificate and the application for registry, and any documents of title mentioned in such application.

4. Upon the transfer of a registered Government ship in the service of the War Department by Bill of Sale the War Department shall be the transferor, and the Bill of Sale shall be in Form A, in the proper form prescribed under the principal Act, omitting the covenant therein contained. Any such bill of sale shall be signed by the Secretary of the War Office on behalf of the War Department.

5. The application for a Certificate of Sale, referred to in Sections 39 to 42 and Sections 44 to 46 of the principal Act, may be made in respect of a Government ship in the service of the War Department by the Secretary of the War Office on behalf of that Department.

6. The person to whom the management of any Government ship in the service of the War Department is entrusted by the War Department shall be registered as provided by Section 59 (2) of the principal Act.

7. Government ships in the service of the War Department registered in pursuance of the provisions of this Order in Council are hereby excluded from the category of ships belonging to His Majesty within the meaning of Sections 557 to 564 of the principal Act.

8. Where any Section of the Merchant Shipping Acts, which by virtue of the Merchant Shipping Act, 1906, and this Order in Council is applicable to Government ships in the service of the War Department, imposes any duty or liability or confers any right or power upon or contemplates any act being performed by the owner of a ship, such duty, liability, right or power shall, subject always to the other provisions of this Order in Council, be carried out, borne, or exercised by the War Department on behalf of His Majesty.

9. In this Order in Council the term "Merchant Shipping Acts" shall mean and include any of the Merchant Shipping Acts, any provision of which is by virtue of the Merchant Shipping Act, 1906, and this Order applicable to Government ships.

10. Section 1 and Sections 8 to 12 of the Merchant Shipping Act, 1894, shall not apply to Government ships in the service of the War Department registered in pursuance of the provisions of this Order in Council. Provided always that no provision of the Merchant Shipping Acts which, according to a reasonable construction, would not apply in the case of Government ships in the service of the War Department shall be deemed to apply to such ships by reason only that its application is not hereby expressly excluded.

TONNAGE LOST AND TONNAGE OF SAILINGS.

The following official announcement has been issued by the Secretary of the Admiralty :—

The Government propose to issue information as to the gross tonnage lost and the tonnage of sailings to and from the United Kingdom monthly in future, on the Thursday morning following the twenty-first of each month.

The information now published weekly as to the numbers of vessels lost, and the numbers entering and clearing from United Kingdom ports, will be discontinued.

Losses of Merchant Tonnage.

The losses of British, Allied and Neutral merchant tonnage due to enemy action and marine risk during the month of March, 1918, compared with preceding periods, are as follows :—

Period.	Gross Tonnage.					
	British.		Allied and Neutral.		Total.	
	Month.	Quarter.	Month.	Quarter.	Month.	Quarter.
1917.						
January ...	193,045		216,787		409,832	
February ...	343,486		231,370		574,856	
March ...	375,309	911,840	239,376	707,533	634,685	1,619,373
April	555,056		338,821		893,877	
May	374,419		255,917		630,336	
June	432,395	1,361,870	280,326	875,064	712,721	2,236,934
July	383,430		192,519		575,949	
August ...	360,296		189,067		549,363	
September ...	209,212	952,938	159,949	541,535	369,161	1,494,473
October ...	289,973		197,364		487,337	
November ...	196,560		136,883		333,443	
December ...	296,356	782,889	155,707	489,954	452,063	1,272,843
1918.						
January ...	217,270		136,187		353,457	
February ...	254,303		134,119		388,422	
March ...	216,003	687,576	165,628	435,934	381,631	1,123,510

Sailings To and From the United Kingdom.

The following official announcement has been issued by the Secretary of the Ministry of Shipping :—

The tonnage of steamships of 500 gross tons and over entering and clearing United Kingdom ports from and to ports overseas was as under :—

Period.	Gross Tons.	Period.	Gross Tons.
1917.		1918.	
October	6,908,189	January	6,336,663
November	6,818,564	February	6,326,965
December	6,665,413	March	7,295,620

Note.—This statement embraces all United Kingdom seaborne traffic other than coastwise and cross-channel.

A Dutch Lloyd?—The Dutch Owners' Union has formed a committee to consider the practicability of forming a classification institute on the lines of the British or Germanische Lloyd.

ELECTRICAL SHIP PROPULSION.

Scottish Engineers and Shipbuilders.

An interesting paper on "Electrical Ship Propulsion" was read by Mr. W. B. Hird, B.A., at a meeting of the Institution of Engineers and Shipbuilders in Scotland held in Glasgow last week. Mr. Hird dealt exhaustively with the different types of electric motors, and the various schemes proposed for altering speed ratio of three-phase induction motors. Referring to the different systems of electrical transmission, he said the propulsion of small vessels, pleasure boats and launches by electricity has been carried out for many years. The energy is applied from a battery of accumulators, and is used in a direct-current motor direct-coupled to the propeller shaft. A considerable development of this system has of recent years taken place in the case of submarines, the underwater propelling machinery of which is necessarily on these lines. The modern problem which has been attracting attention within comparatively recent years is on entirely different lines. The electrical part of the equipment must be looked upon merely as a form of gearing between the turbine and the propeller, at their most efficient speeds, instead of making a compromise and running at some intermediate speed which is the most suitable neither for the propeller nor for the turbine as is necessarily done in the case of the direct drive. By introducing any kind of gearing between the prime mover and the propeller one or more of the following objects is aimed at :—

(1) Speed reduction to enable the prime mover and propeller to run each at its most efficient speed.

(2) Variation in speed of the ship without alteration of the prime mover speed.

(3) Reversing without the need of providing special astern turbines.

Passing to the different methods which have been proposed to carry out the objects, Mr. Hird discussed in detail the various systems of electrical machinery, including (1) ordinary three-phase alternators and induction motors without any special speed-change devices, and also with motors having windings giving different numbers of poles ; (2) motors where different speeds are obtained by the use of more than one rotating member, as in the "spinner" motor and several proposed modifications ; (3) two motors in cascade ; (4) systems in which different speeds are obtained by providing circuits of different periodicities, and motors carrying windings of different numbers of poles ; and (5) combination of one or other of the foregoing with mechanical reduction gear. He then went on to describe the schemes which have actually been put into practice, and in this connection referred to the United States Navy collier *Jupiter*, the experimental vessels *Electric Arc* and *Tynemount*, with which the late Mr. Henry Mavor was associated, and the coasting vessel *Mjölner*.

Future Developments.

In concluding his paper, Mr. Hird said it would be rash to venture on any prophecy as to what the future lines of development may be. The problem appears under such very different forms in different classes of ships, and varies so much with their size that each individual case will always have to be considered on its merits. There are, however, some general considerations which may usefully be glanced at. That great gains in efficiency and weight can also be obtained by the substitution in similar ships of electrical drive instead of reciprocating engines, or of direct-coupled turbines, has been amply demonstrated. The *Jupiter*, the *Mjölner*, and innumerable schemes, carefully worked out for purposes of comparison though they have not materialised into actual construction, are sufficient to demonstrate this. When, however, the turbine and electrical speed-change is compared with the turbine mechanically geared to the propeller, there appears to be little chance that the electrical apparatus can ever attain to quite the same high efficiency as the mechanical gear, if the comparison is made at full speed and full power. The gain of efficiency in the mechanical as compared with the electrical gear does not, however, in large ships amount to more than 2 or 3 per cent., and this therefore only means that out of the very considerable gains to be obtained from the introduction of gear some 2 or 3 per cent. must be sacrificed if electrical gear is used.

In the question of weight there appears to be, according to the latest figures, some advantage for the mechanical gear. It would appear, however, not improbable that considerable improvements in this respect may be effected as time goes on. The importance in any pioneer installation of taking no risks necessarily leads to the adoption of very conservative factors of safety in all parts. These may turn out, as the result of experience, to be unnecessarily high, and the same reason has led to the adoption for ship propulsion of electrical apparatus built on exactly the same lines as for land practice, where weight is of comparatively small importance. Further experience in designing for the special purpose of ship work will doubtless lead to considerable improvement in the weight of the apparatus. Even should these hopes not be realised, and the weight of the electrical equipment remain greater than that of the mechanical, and whilst admittedly the efficiency of the latter is likely to remain somewhat better than that of the electrical, these small advantages are offset by the simplicity and especially by the flexibility of the electrical system. The fact that it does away with the complication of astern turbines and cruising turbines evades all the difficult problems which arise from running these auxiliary turbines idle whilst going ahead. Nothing could be more simple or less liable to failure than the reversing of the electrical motor driving the propeller. Where changes of speed are required the actual operation of changing speed is also as simple as possible, and the electrical system can obviously sustain its claim of being more free from complications than its rivals. It is also extremely flexible if a cruising speed is used. All the plant not actually required is shut down, and in the case of accident the damaged part can be electrically disconnected by suitable switches in as many seconds as it would require hours to disconnect a damaged mechanical gear or turbine.

Simplicity and Flexibility.

If electrical ship propulsion has a future before it, as surely it has, these points of simplicity and flexibility would, he believed, be the deciding factor in bringing it to the front, and it was not stretching an analogy too far, he thought, to point in this connection to the development of electric drive on land. Few engineers, if putting down a factory at the present day, would consider any method of driving it except by electrical motors, and the reasons leading to this choice are the convenience of handling, the simplicity and chiefly the flexibility of the system, and also the ease with which the consequences of a breakdown are localised rather than absolute gain in efficiency, important as this may be. He saw no reason why the same considerations should not have an equally powerful influence in the development of electrical ship propulsion.

As to what system or systems of motors and transmission are likely to be adopted, it would be presumptuous at the present stage to offer an opinion. Where no cruising speed is required there appears no valid reason for adding any complications to the simple squirrel-cage motor, the slow speeds for manœuvring being obtained by slowing down the turbine. When a cruising speed is wanted the choice lies between those different systems of speed change he had already described. In his opinion, which was possibly biassed by his connection with the initial stages of the system, there are many advantages in the method of supply at different periodicities, and he could only express the hope that this system, which would always be connected with the name of the late Mr. Henry Mavor, and with the Clyde on which it first made its appearance, would be given an opportunity on a large scale of demonstrating its capabilities.

THE NAVAL RAID ON ZEEBRUGGE AND OSTEND.

Before the war, the pages of *Shipbuilding and Shipping Record* were devoted to descriptions of the work for the Navy as well as for the merchant service, and all the larger and more noteworthy vessels of their time were illustrated and described as they were launched and ran their trials. The advent of war necessarily curtailed our activity in this direction, and since but with a very few noteworthy exceptions, the enemy's fleet has hid ingloriously within its harbours and behind its mine fields, the work of the Navy, arduous as it has been, has yielded little of a spectacular nature. The affair of St. George's Day, when we "gave the dragon's tail a damned good twist," is so notable an exception, that we cannot let the opportunity pass without paying our tribute to the skill and gallantry that was displayed on that occasion by all ranks, or to express our sympathy for those who paid the greatest price of all.

The full particulars of the raid have appeared in the columns of the Press, and we content ourselves with the publication of some photographs of the vessels which took part in the affair. Two of these show the arrangements which were made on the decks of H.M.S. *Vindictive* for landing the Marines on the mole at Zeebrugge, while the other two tell eloquently of the reception which the landing parties and those who remained on the vessels received, the first of these two photographs showing the bridge of H.M.S. *Iris*, which was wrecked by a shell, and the second one of the funnels of H.M.S. *Vindictive* peppered with machine-gun bullets, to a hail of which the landing parties were subjected.

STEEL FOR SHIPBUILDING.

Mr. Churchill, as Minister of Munitions, made a statement on the work of his Department, on April 25, in the House of Commons, and referred to the supply of steel for shipbuilding. He said: "The second important new task which has been put upon us is the provision of steel in proper forms for shipbuilding. The directions which I receive from the War Cabinet assigned to this task priority even over the production of shells, and, in consequence, very great efforts have been made to accumulate the greatest quantity of steel, and to increase our rolling-mill capacity to provide the plates which are the indispensable limiting factor governing all shipbuilding. I have explained already the stringency in regard to steel which arises out of our diminished importation of ore. Nevertheless, the exertions which have been made in this country since the beginning of the war have made our yearly production of steel nearly half as large again as it was in the piping times of peace. I am not by any means satisfied with this development. If we look back on the history of the past we see the great domestic resources in various classes of iron ore which we possess. In spite of the difficulties of labour, we cannot be content with the present position, and every effort must be made to improve it; but still, without relaxing our efforts, we may note that our steel budget this year, in spite of the shortage of tonnage, eclipses all previous records. But the limiting factor in shipbuilding was not steel, but ship's plates, and to a lesser extent, sections. If there is a stringency in steel, it is nothing like the stringency that existed in regard to steel plates. Six or eight months ago that was a definite barrier to a really great programme of ship construction. Everyone wants steel plates. Ships, locomotives, boilers, tanks, workshops of all kinds demand plates, and cannot carry on the industry of the country without an abundant issue of plates and sections in all sorts of directions. Our Allies in France and Italy make the most urgent demands upon us for plates. The programme of rolling mill expansion which was undertaken in the middle of last year, set on foot by my right hon. friend (Dr. Addison), is in increasing operation, and is already yielding a steady, substantial output. For the last six months, the shipyards have been supplied with steel plates and other shipbuilding materials to the fullest possible extent. Every demand has been met, and a substantial surplus has been provided. Steel in all these directions is no longer a limiting factor in the construction of ships. On the contrary, we have at present to slow down our deliveries to the yards, and are at present devoting our production of plates to some extent to other, only less urgent, needs, which we hope to clear off, so as to clear the rolling mill capacity later in the year for the fullest possible development of our shipbuilding programme."

BRITISH-BUILT CONCRETE VESSEL.

In our issue of last week, we briefly drew attention to the launch of what may be described as the first large sea-going reinforced-concrete vessel built in this country. We are enabled this week to publish four photographs which will give some idea of the appearance of these vessels, both during construction and on completion. They have been built by J. & W. Stewart, of 42, Albemarle Street, London, W.1, who are specialists in reinforced-concrete construction, to the order of the British Admiralty. The principal dimensions are as follows:—

Length, between perpendiculars	150 ft. 0 in.
Breadth	24 ,, 6 ,,
Depth	13 ,, 6 ,,
Draught	10 ,, 11½ ,,

The vessel has been built as a towing barge for sea-going traffic and is fitted with the necessary towing appliances. She has a displacement of about 900 tons, and a deadweight carrying capacity of about 400 tons on 11 ft. draught. The vessel is divided by four watertight bulkheads into five watertight compartments, the forward compartment being used for stores and the after compartment for crew's quarters, the three large intermediate compartments being for cargo.

Being the first large concrete vessel built in this country, it was thought advisable to make it of considerable strength, and both in designing the vessel, and also in carrying out the work, strength rather than lightness or economy has been the main consideration. Further, in order to be able to make close comparisons between this vessel and steel vessels, it has been constructed according to the ordinary ship lines, which, of course, has added greatly to the labour and cost of constructing the wooden casing for the concrete, in order to get the correct curves both longitudinally and transversely, but the result has been a vessel of pleasing appearance, and, as far as can be estimated, also of superior strength.

The vessel has been built according to Lloyd's regulations and under their inspection, and it has been classified "A1" by that Society, and about 260 cube yards of concrete and 65 tons of steel bars were used in the construction of the vessel.

In order to avoid the stresses imposed by launching from a slipway, the vessel has been built in a dry dock at Brentford on the Thames.

A glance at the photographs reproduced on pages 493 and 494 gives a good idea of the appearance of these vessels. It will be noticed that two fenders or wooden rubbing chocks are fitted for the entire length of the hull. These are made of well-seasoned timber, and are fitted as a protection against damage due to collision with dock walls, piers or with other vessels. The only steel visible is the framing of the hatches over the cargo holds and the hawser pipes.

It is of interest to record that the builders estimate the life of the vessel at at least 100 years.

AMERICAN MISSION AT CLYDE SHIPYARDS.—An American Mission, 20 in number, arrived in Glasgow last week and visited some of the Clyde shipyards. In an address to the workers Mr. James Wilson, President of the Patternmakers' League of North America, Cincinnati, declared that everywhere in Britain the delegates had been they were greatly impressed with the wonderful spirit of the British people and the determination to continue the war till the menace of German militarism was destroyed.

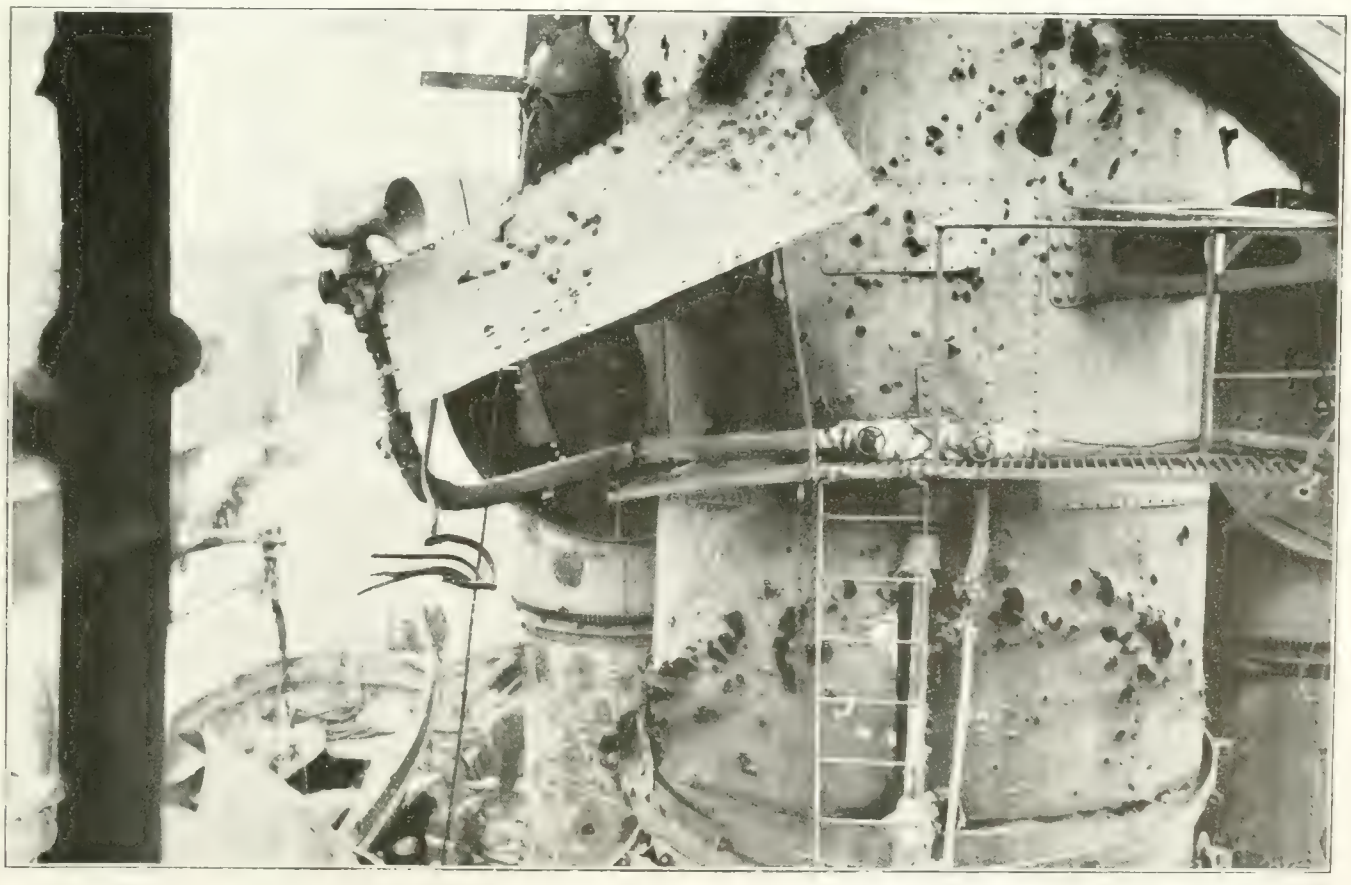
Steel Foundations of Reinforced-Concrete Sea-going Barge.

Forward Holds of Reinforced-Concrete Sea-going Barge.

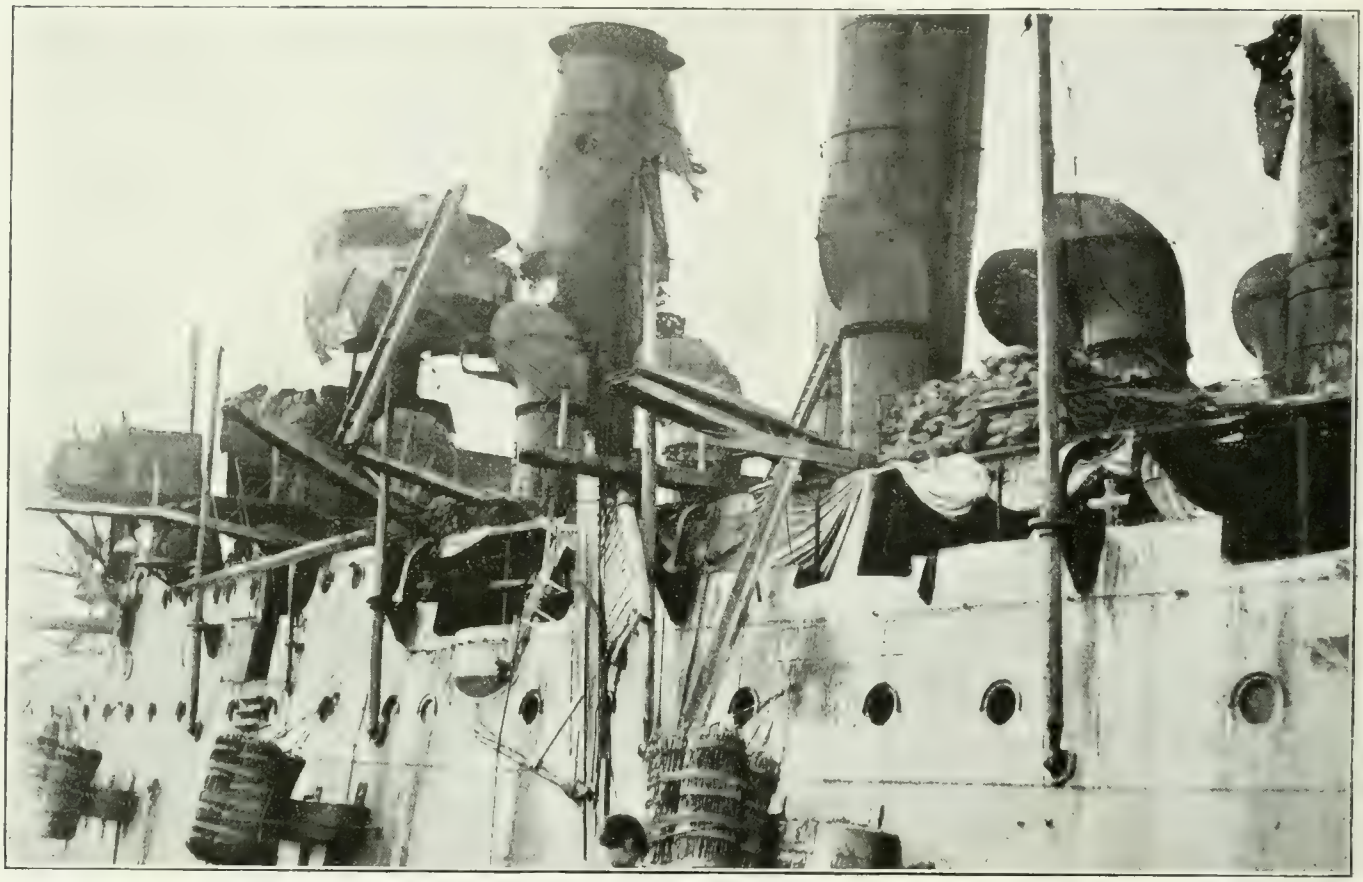
After End of Reinforced-Concrete Sea-going Barge.

Reinforced-Concrete Sea-going Barge nearing Completion. (*See page* 492.)

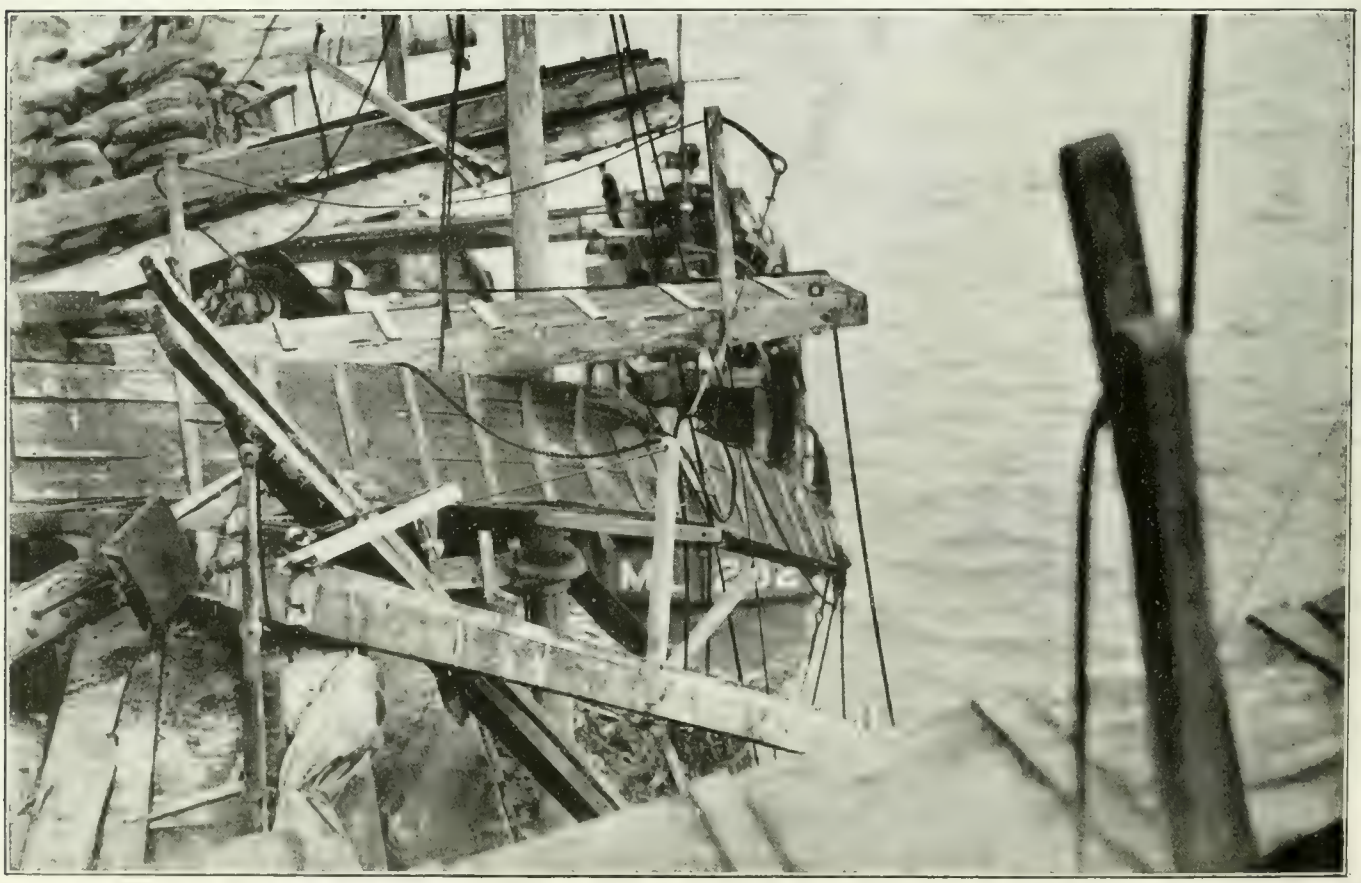
The Wrecked Bridge of the "Iris."



One of the Riddled Funnels of the "Vindictive." (*See page* 492.)



Side of H.M.S. "Vindictive," showing Improvised Brows for Landing at Zeebrugge.



Another View showing Improvised Brows on the "Vindictive." (*See page* 492.)

FERRO-CONCRETE SHIPS.

Mr. T. J. Gueritte's paper on "Ferro-Concrete Ships," read before the North-East Coast Institution of Engineers and Shipbuilders, at Newcastle, on March 12, and printed in our issues of March 21 and April 11 (pp. 311-312 and 413-416), was subjected to a very thorough discussion at a special meeting of the Institution, Mr. Edwin L. Orde presiding.

Major Maurice Denny wrote:—With reference to Mr. Gueritte's statement, that "It becomes of great interest to use, for the reinforcement, steel possessing a higher elastic limit than mild steel, the elastic limit being an all-important factor in ferro-concrete work." It was not stated whether the raising of the yield point was accompanied by a corresponding improvement in the ultimate strength, but, so far as the steel alone was concerned, there appeared to be no objection to higher working stresses in association with higher elastic limit. It was when one turned to consider the concrete that the propriety of designing a structure to take advantage of the higher yield point in the steel seemed doubtful. If Mr. Gueritte would state that the treatment which had produced the high elastic limit had also had the effect of increasing the modulus of elasticity, there was nothing more to be said, but he made no such claim, nor did it seem likely that such was the case. If, also, it were true that to avoid rupture of bond between the steel and the concrete, the unital stresses in the two must be to each other as the respective moduli of the materials, and no change in the elastic limit of the steel alone would suffice to alter that relationship. Taking a concrete with a permissible working unital stress in compression of 750 lb. per sq. in., such a composition would have a modular ratio of about 12·5. The maximum stress in the steel would then be 12·5 times 750, or 9,375 lb. per sq. in. That was well below the permissible working stress for mild steel, and it did not seem worth while to employ a material which could be stressed higher when working alone. Turning to a consideration of the reinforced member in tension, omitting the value of the concrete altogether, it was usual to work to a stress figure of 16,000 lb. per sq. in. in the steel. In land work, however, for which that figure was applicable, when the steel and concrete were both taken into account, the stress produced in the latter was within even the moderate capabilities of concrete in tension. In marine work the percentage was considerably higher. If they took a percentage of 4, which was not unreasonable, it was seen that the tensile stress in the concrete was about 440 lb. per sq. in., which must be near the ultimate for the material. Any increase, then, in the permissible stress chosen for the steel would be reflected in the actual tensile stress in the concrete and would appear to have the effect of finally stepping over the point beyond which trouble might be expected.

Mr. T. G. Owens Thurston, of the Ferro-Concrete Ship Construction Company, Ltd., wrote:—With regard to Mr. Gueritte's forecasts regarding the improvement in weight on going to larger ferro-concrete vessels, the writer was of opinion, in view of the severe bending moments obtaining in the case of these larger vessels, that, in actual practice, they should hardly realise such a large improvement as Mr. Gueritte indicated in his tables. In that connection, it would be advantageous to adopt greater depth and less beam for ferro-concrete vessels than shown in Table I. That would increase the depth of the longitudinal girder and, at the same time, decrease the width of the deck and bottom panels; and, in view of the fact that the centre of gravity of the concrete ship was appreciably lower than that of a similar steel ship, these alterations of dimensions would not adversely affect the metacentric height.

Mr. J. Foster King, of the British Corporation for the Survey and Registry of Shipping, Glasgow, wrote that, in dealing with the material, Mr. Gueritte referred to the heavy compressive stresses to which the concrete was subjected, but did not mention tensile stresses. There was practically no part of a ship structure of which one could say, "This is always in tension or always in compression." As it was obvious that there must be some stress at which the concrete would crack to an extent which rendered it no longer watertight, Mr. Gueritte would do a great service to ship design if he could furnish particulars of such experiments as would determine the highest tensile stress permissible upon concrete which must remain watertight. The writer had spoken at length elsewhere upon the theoretical and practical unsoundness of the assumption that the concrete could be excluded from calculations of tensile stress in ship work, and regarded Mr. Gueritte's remarks upon the effect of concentrations of steel as strong confirmation of views which already seemed to have received a large measure of acceptance. Reinforced concrete might reasonably be expected to provide a satisfactory shipbuilding material if the stress on the concrete was sufficiently low to ensure watertightness—a result which seemed possible within the weights of material usually proposed by designers—but he was still as strongly of opinion as on his first association with the problem that concrete, as it was now known, was not the best medium for that type of construction, and that future economic success would depend upon the use of a more waterproof cement having higher tensile strength and greater elasticity.

Mr. C. Fowling, of Lloyd's Register of Shipping, wrote:—There was little doubt that ferro-concrete would be found useful for small vessels engaged in coasting and on channel voyages, and, with the experience gained from these, it would be seen if it were practicable to proceed with larger vessels. It must be remembered that the stresses which had to be provided for in small vessels engaged in moderately smooth waters would be accentuated and become much more complicated in a vessel engaged on the open seas. Very important data should be available from the ferro-concrete vessel, 320 ft. in length, designed for a deadweight capacity of 5,000 tons and a load displacement of 7,900 tons, reported to have been recently launched in America. Meanwhile, so far as this country was concerned, it was not yet proposed to build any vessel having a larger deadweight capacity than about 1,000 tons. In designing a ferro-concrete vessel the naval architect had to take into consideration the reliability of a material of which he had practically no knowledge, save such as might be obtained from text books, and it was necessary that he should be associated with an expert in ferro-concrete construction in order to obtain satisfactory results. Lloyd's Register had appreciated that fact by appointing ferro-concrete engineers to assist in dealing with designs submitted for approval and to survey these vessels whilst building. The Committee, in approving plans for the building of ferro-concrete vessels, had decided to class them with the notation "Experimental" and to require that they should be submitted to an annual survey.

Professor T. B. Abell wrote stating that variations in the weight of the vessel became of greater importance in what might be termed "constant draught" vessels, *i.e.*, vessels in which the variation between the load and light draught was small, as in warships and fast passenger vessels. It was in building the hull of a steel vessel that the greatest care had to be exercised to save weight, since the hull constituted the greater portion of the vessel's total weight. In a steel vessel, saving of weight could only be obtained by an economical arrangement of the structural material and by great attention to detail, because the steel was of constant specific gravity. In a concrete vessel the specific gravity of the material might vary very appreciably, not only from vessel to vessel but in different portions of the same vessel, depending upon the ingredients and the mode of mixing. It appeared impossible to fulfil requirements as to strength and impermeability with concrete of specific gravities differing as much as 10 per cent. There was, therefore, need for great care in selecting the material for the aggregate and in determining the average specific gravity of the concrete for the purpose of settling the dimensions of the design. It must be borne in mind that, whereas the densest concrete gave the best concrete

qua concrete, it was the lightest concrete, fulfilling requirements as to strength, permeability and endurance, which tended to economical design. Generally speaking, until they had sufficient experience to guide them in the efficiencies of concrete shipbuilders in working to specified mixtures and thicknesses of structure, it would be as well, in estimating weight of structure, to assume a high figure for the density of the concrete.

Professor J. J. Welch, of the Chair of Naval Architecture, Armstrong College, Newcastle, drew attention to the dangers possible from cracking of the concrete and said a waterproof coating would probably delay or prevent the consequent effect. The author appeared to think that the actual stress coming on the material of a small vessel was less than in a large one; that, however, was not the case. The stresses referred to in Table IV were not actual stresses, but those calculated on certain standard assumptions which might or might not be met with in practice. It was assumed that the ship was on waves having a height one-twentieth of their length, but short waves usually had a height greater than that standard, whilst for long waves the contrary was the case. Thus, the actual stresses on short ships were greater and on long ships less than given by the standard calculations. Again, since short waves were more frequently encountered than long ones, a short vessel was subjected to alterations of maximum stress much more frequently than a long one, and allowance must be made for extra fatigue of the material. The proper allowance was based on experience, so that the real factor of safety was the same in both types of vessel.

Mr. R. F. Hindmarsh (Chief Engineer to the Tyne Improvement Commission) stated that, in one ferro-concrete quay he recently examined he found that, owing to the movement of vessels alongside, the outer skin of concrete had been broken off portions of the face piles, thus exposing the steel reinforcement, and the owners of the quay had considered it necessary to place heavy timber fenders in front of the quay to prevent further similar damage. It was the usual practice now to fix timber fenders in front of ferro-concrete quays and jetties to prevent such damage. He did not know whether the ferro-concrete vessels now being constructed in this country were being fendered in order to prevent, as far as possible, damage due to contact with quays, other vessels, &c., but such fendering would appear to be highly desirable from that point of view. Such fendering would, however, if carried below the waterline, add considerably to the resistance of the vessels when moving through the water. In order to be effective under all conditions, the fendering would have to be both vertical and horizontal and extended down to the light draught line.

Perhaps Mr. Gueritte would say whether he thought there was any likelihood of cracking taking place in monolithic ferro-concrete vessels, where the concrete and steel would not only be subject to expansion and contraction owing to temperature changes, but also owing to alternating tensile and compressive stresses which must come upon vessels in a seaway.

It had been the best practice in concrete work, for some time, not to permit of any rendering or plastering of the surface, as, sooner or later, such plastering was sure to come away from the main body of the concrete. In the event of damage to concrete vessels, the whole of the concrete adjoining the damage would have to be cut out and replaced by new concrete, which should, especially in the under-water portions of such vessels, be given, say, a month or six weeks to mature before coming into use. That appeared to be a grave disadvantage in connection with ferro-concrete vessels, as a steel vessel could proceed to sea immediately after repairs were completed.

In repairing ferro-concrete, it was necessary, in order to ensure watertightness, to carefully work the concrete round the steel reinforcement, and, therefore, it did not seem to him to be possible to carry out satisfactorily under-water repairs to ferro-concrete vessels unless a temporary watertight patch or cofferdam was fitted on the outside and the work was done in the dry inside the patch. That process was laborious and expensive and, usually, would not be carried out if a dry dock were available.

The author had not dealt with the question of the effect of vibration owing to propelling machinery, &c. It might be that, where such vibration was considerable, it would have a very detrimental effect on the parts of the vessels most exposed thereto.

Mr. J. T. Batey, of Hawthorn, Leslie & Co., Ltd., said he could not see eye to eye with Mr. Gueritte in the suggestion that unskilled labour could be employed exclusively in the construction of ferro-concrete vessels. It was inconceivable to him as a shipbuilder that unskilled labour could be exclusively employed in fixing the exact position of the steel work in the reinforcement. The form of the vessel had to be maintained whilst on the stocks and it took men of exceptional experience to keep an ordinary steel vessel up to its correct form, dealing with material stiff in itself and a fairly heavy scantling. When they came practically to construct the form of a vessel with those comparatively small sections of round iron, it appeared to him that labour of the highest skill was required to maintain that form in its position. Then, as to the shuttering, it would be necessary that that should be placed most accurately in relation to the steel work, so that, when the concrete and the steel were a complete job, the steel was in the correct position to give the maximum amount of strength and reinforcement to the surrounding concrete. To work the shuttering itself would require great skill.

Moving a vote of thanks to Mr. Gueritte, the President said the naval architect of the future, if called upon to design a concrete ship, would not only have to design the structure of the ship, but the material also. It was claimed in the paper that ferro-concrete was a new material. If that were so, the disposition of the reinforcement must have a very marked effect on the behaviour of the material under the stresses to which it is subjected. The first point requiring consideration was the bond or union between the reinforcement and the concrete. The material recommended by Mr. Gueritte as reinforcement was practically triangular in section, with the angles rounded off. The rod was twisted after it was rolled, first with a view to increasing the surface exposed to the pressure of the surrounding concrete, and, secondly, with a view to raising the elastic limit. A speaker on the subject the other day mentioned that the pressure exerted by the concrete on the reinforcement amounted to something like 200 lb. per sq. in., and that that was equivalent to the tensile strength of the bar, provided that the pressure was exerted on a length of 40 times that of the reinforcement. That had rather an important bearing on the various small parts of the structure of the ship. Naval architects had got to study a new line of thought altogether or combine with ferro-concrete experts who had devoted very special attention to the behaviour of ferro-concrete in such structures as ships.

Future of Antwerp.—At a dinner in London recently given by the Chamber of Shipping to the Anglo-Belgian Committee of Commerce, Lord Inchcape said that when the war was successfully concluded, Belgium restored to her lawful owners, and the great port of Antwerp again open to trade, they hoped to work in fullest harmony in all matters commercially for the benefit of both countries. German machinations had hitherto prevented British shipowners from securing that share in the trade of Antwerp which they were prepared to carry. He could assure their Belgian friends that if they were prepared to support British shipowners the latter would do their best to retain the trade of Antwerp for Belgian and British shippers. It might not be possible to exclude German ships altogether from Antwerp, for that would mean carrying on the war for ever. M. Leon Dens, president of the Belgian Shipowners' Association, in reply, denied that Antwerp was a German port before the war. The English flag was always most important, and there was no special link of sympathy between Antwerp shipowners and Germans. But if British shipping classes wished to secure predominant influence after the war, they would have to alter their methods.

GENERAL NEWS SECTION.

PERSONAL.

Earl Brassey has been elected on the Committee of the Marine Society, in the place of his late distinguished father.

Councillor George Wareham, J.P., who has been elected chairman of the Barry Urban District Council, has been connected with the Barry Graving Dock and Engineering Company, Ltd., for nearly 30 years.

Mr. Wm. Joseph Kestell, of St. Osyth, Barry, head of the Cardiff firm of Kestell Bros., shipowners and coal exporters, who died on June 6 last, left estate of the gross value of £5,169, of which £2,642 is net personalty.

Sir William Weir has been appointed Secretary of State for the Royal Air Force, in succession to Lord Rothermere. Sir William is a comparatively young man, 41 years of age, and a member of the firm of G. & J. Weir, Ltd., Engineers, Glasgow. He took an active part in the manufacture of munitions immediately after the commencement of hostilities, and assisted in organising the West of Scotland area for war purposes. He was Scottish Director of Munitions in 1915-16 and later became Director-General of Aircraft Production and Controller of Aeronautical Supplies. Early in 1917 he received a knighthood in recognition of his services to the country. An exceedingly warm tribute to Sir William Weir was paid by Mr. Churchill last week in the House of Commons, in speaking of the superiority of our Air Service. "So far as the Ministry of Munitions is concerned," said Mr. Churchill, "we owe this achievement to the work of a very remarkable man. In Sir William Weir we have found not only a great producer, but a man with war intuitions of a very high order, a man fitted above all others I have come across in this sphere of business to express the swiftly changing war conceptions which a service like this provides in terms of a great and expanding mechanical supply." In the debate on the Air Force on Monday, in the House of Commons, the Prime Minister also warmly eulogised the foresight of Sir William Weir in planning the machines for new work. A very large measure of the efficiency of the Air Force was due to him. This, indeed, is the highest praise that could be offered to the new Air Minister.

Sir William Weir,
Secretary of State for the Royal Air Force.

Mr. R. F. Maccoy, son of Mr. John Maccoy, Mayor of Gateshead, has been appointed Assistant Manager of the Mercantile Dry Docks Company, Ltd., Jarrow. For a good many years he held a responsible position with J. T. Hogg & Co., engineers and ship-repairers, Barry

Mr. Austin E. Harris has resigned the joint managing directorship of the British Steamship Investment Trust, and Mr. Frederick William Lund, a director of Harris & Dixon, has been elected in his stead, jointly with Mr. W. Holford Dixon. Mr. Harris retains his seat on the board.

A testimonial is to be presented to Captain D. M'Neill, formerly of the North British Steam Packet Company. The presentation is to be made by Lord Strathclyde at a meeting of subscribers in the Court House, County Buildings, Dunoon, on May 11. Lord Inverclyde is to preside.

Mr. W. J. Noble, Chairman of the Cairn Line of Steamships, Ltd., has been elected President of the Shipbrokers' Association at Newcastle; Alderman R. Mason has been elected Chairman; Mr. T. T. Anderson, Vice-Chairman; and Mr. W. Dodds, of Wait & Dodds, Hon. Secretary and Treasurer.

Mr. H. M. Grayson has been appointed Director of Overseas Ship-repairing to the Admiralty and Auxiliary Shipbuilding Departments. About a year ago, Mr. Grayson and Mr. G. S. F. Edwards, of Smiths' Dry Dock Company, Ltd., were appointed by the Government to act as directors of ship-repairing.

Sir Walter Runciman, Bart., Chairman of the Moor Line, Ltd., and Member of Parliament for the Hartlepools, has intimated his willingness to stand as Liberal candidate for Morpeth Borough, the seat from which Mr. Thomas Burt, the veteran miners' leader, is to retire at the next General Election.

Mr. John Cory, Mr. J. T. Duncan, Mr. W W. Jones, Mr. Lewis Lougher, and Sir William Seager, were last week elected by the Cardiff District Committee of the Shipping Federation, Ltd., as additional representatives on the Council of the Shipping Federation, London Cardiff now has eleven representatives on the central body.

The death has taken place of Captain Turner Russell, one of the oldest shipmasters in the Mersey District. He had passed his 80th year and had been throughout his long sea career with Lamport & Holt and Alfred Holt & Co. His long and continuous service with the latter firm was a source of pride to him, this covering a period of roughly 52 years.

The Cardiff Chamber of Commerce have elected Sir Thomas E. Watson, Bart., as a Member of the Committee of Lloyd's Register of Shipping to fill the vacancy caused by the death of the late Sir John Gunn. Sir Thomas belongs to the firm of Pyman, Watson & Co., Ltd., and has large interests in connection with Port Talbot. He has already served on the Committee, and represented Newport and Swansea from 1895 to 1899. He was created a baronet in January last for services rendered to the Government in connection with the regulation of the export of coal.

Captain W. J. C. Nash has been appointed Marine Superintendent of the London & North-Western Railway Co. at Holyhead, in succession to the late General S. E. Holland. The appointment is said to be a unique one in the history of the Company, inasmuch as it is the first time that so important a position has been given to one of the Company's captains. Captain Nash served his apprenticeship with the Liverpool shipowning firm of William Roberts & Co., and in May, 1891, entered the service of the London & North-Western Railway Co. as second officer, being promoted to command in 1900.

Capt. William Alfred Wheler is retiring after 54 years' service with the Peninsular and Oriental Steam Navigation Company. He was born in 1843, and joined the P. and O. service as a junior officer in 1864 from the Indian Navy. In later years he held a number of important commands. Among the ships which Capt. Wheler commanded was the *Avoca*, employed as a hospital ship for the Indian contingent in the Egyptian War of 1882, and he was awarded for his services the Egyptian medal and the Khedive's Bronze Star. He commanded the *Geelong*, which was employed by the Egyptian Government in trooping in the Red Sea between Suez and Suakin

in the Egyptian campaign of 1885, and also the *Coromandel*, when used as a hospital ship in the Ashanti campaign. He became commodore of the P. and O. fleet in 1901, his last ship being the *Persia*. He was appointed the company's agent at Cardiff in 1904 and is now retiring from that position.

The following gentlemen are among those who have been appointed to serve as a committee to advise the Department of Overseas Trade (Development and Intelligence) on matters relating to the activities of the Department:—Sir Francis Barker, of Vickers, Ltd., representing the Federation of British Industries; Sir Algernon F. Firth, Bart., Chairman of T. F. Firth & Sons, Ltd., Brighouse, representing the Association of Chambers of Commerce of the United Kingdom; Mr. W. H. N. Goschen, Fruhling & Goschen, and director of the British Trade Corporation, the Atlas Assurance Company, Ltd., &c.; Mr. W. L. Hichens, Chairman of Cammell, Laird & Co., Ltd., Sheffield; the Right Hon. Lord Inchcape, G.C.M.G., Chairman and managing director of the P. & O. Steam Navigation Company, the British India Steam Navigation Company, Ltd., &c.; Mr. G. A. Moore, of Holt & Moore, Liverpool, and Chairman of the Executive Merchants' Committee of the Liverpool Chamber of Commerce, Mr. J. W. Murray, Chairman of the Glasgow Chamber of Commerce; and Mr. C. V. Sale, of Sale & Co., merchants and shipowners, and Deputy Governor of the Hudson Bay Company.

PORT OF LONDON AUTHORITY AND TRANSPORT WORKERS.

The following is the text of a letter, dated April 25, addressed by Viscount Devonport, Chairman of the Port of London Authority, to the Chairman of the Committee on Production with regard to the demand of the National Transport Workers' Federation for a standardised war wage:—

"SIR,—The Port of London Authority were informed by a letter of the 23rd inst., from the Ministry of Labour, that the claim made by the National Transport Workers' Federation on behalf of general cargo workers for an advance of 8d. per hour over pre-war rates, has been referred to the Committee on Production for decision, and requesting the Authority's representatives to attend the hearing of the case on Friday next, the 26th inst.

"Whilst disclaiming any intention of discourtesy to the Committee on Production, we desire to submit for their information the reasons which induce this Authority to abstain from being parties to a procedure for which in their judgment there is no justification whatsoever, but which, notwithstanding, has been forced against them by the Ministry of Labour, in spite of the Authority's emphatic protest.

"The Ministry of Labour asserted in their letter of the 27th March 'that a difference exists or is apprehended in the Port of London' in regard to the claim above referred to. At that moment, and since, there has been not the slightest indication of any such situation. The men have made no application to the Authority nor have the two labour representatives, Mr. H. Gosling and Mr. W. Devenay, who are members of the Authority representing labour, invited us to consider any grievance affecting the wages of this class of their employees. The practice of the Authority has always been to receive the men at any time to discuss all matters in relation to the conditions of their employment, and this has been repeatedly taken advantage of by the men and their representatives, and the course now adopted by the Government, therefore, appears to us to be unwarranted.

"With regard to the claim for standardisation, I would remark that the men and their Unions have consistently refused to agree to this principle on the ground that a flat rate would act with unfairness to those men who do not secure the regular employment such as is enjoyed by the Authority's men, and the employers in the Port have, therefore, always acquiesced in the differentiation. To strain the law as the Ministry of Labour are doing in order to compel parties to arbitrate upon a question where there has never been conflict is to create in London the very conditions of unrest which the Ministry are professing to endeavour to abate. For this reason alone the Authority feel it incumbent upon them to abstain from attending the arbitration.

"But there are other considerations which impel us to this course. On four separate occasions, in order to meet the enhanced cost of living, the Authority have granted war bonuses, amounting in all to 18s. per week. This, notwithstanding, we are now confronted with the demand from the Transport Workers' Federation, the effect of which, if granted, would be to raise the 18s. per week to 32s. per week. If such a demand were made on the ground of enhanced cost of living, the Authority would have gladly investigated the claim as hitherto. This reason is, however, not put forward—indeed, the proposal of the Transport Workers' Federation is advocated on the ground that the men are entitled to exploit the economic position in this critical state of the nation's fortunes.

"The grave dangers to the State of compliance with such demands are set forth and emphasised in the recently issued report of the Select Committee on National Expenditure, of which Mr. Herbert Samuel is the chairman, and two of whose members are prominent Labour leaders. The Committee point out that the succession of fresh cycles of wages advances are vastly increasing the cost of the war, and that if the process continues, the result can hardly fail to be disastrous to all classes of the nation, and recommend, first, 'that the strongest case should be required to be established before any advance of wages is conceded on any ground other than the rise in the cost of living,' and, second, 'that an inquiry should be set on foot to ascertain what has been the actual increase in the cost of living to the working classes.' The Government have now appointed such a Committee as is suggested, to inquire specifically into the cost of living, and the Authority feel justified in taking the stand that, until this Committee has reported, they are unable to give any countenance or be parties to any proceedings which deal with applications such as that now before you.

"In dealing with this question, two most important further considerations have to be borne in mind, viz., the effect on the Authority's finances and on the post-war position of the Port in relation to the competition of the near-Continental and enemy ports. As regards finance, to enable the Authority to pay the war bonuses already granted, it has been necessary to obtain an Order in Council authorising us to extend our statutory powers to raise the dock charges by 50 per cent. If the application now made is acceded to, a further yearly expenditure of hundreds of thousands of pounds will have to be met by further increases in charges, probably bringing them up to 100 per cent. beyond pre-war level. The Authority regard with much misgiving the effect of such a tax upon the industry of the Port after the war, especially in view of the weapons of cheap labour and unlimited State aid which will be available to the enemy ports. Our most valuable trade is the entrepôt trade, and as the incidence of charges is the ruling factor in its maintenance and development, the Port will be crippled if the Authority is compelled to levy high charges in order to pay for the enormous additional expenditure with which they are threatened. London stands in quite a different category from any other United Kingdom port in this respect.

"These are some of the reasons why, as trustees for the mercantile and shipping interests of the Port and for stockholders representing £30,000,000 of Port of London stock, the Authority desire to protest strongly against the proposal upon which you are asked to adjudicate.

"Yours faithfully,

"DEVONPORT, *Chairman*."

DEEP WATER WHARVES FOR THE THAMES.

In drawing attention a short while ago to the proposal to construct a deep water wharf on the River Thames at Canvey Island, we expressed the opinion that the question at issue between the promoters of the scheme and the Port of London Authority was not so much the value of such wharves as compared with dock accommodation for the unloading and loading of ships, but rather whether it was desirable for any body of persons other than the Port of London Authority to have a voice in the Shipping accommodation facilities of the Thames. The Board of Trade has just issued a report on the Bill to incorporate a company for the construction of a deep-water wharf at Canvey Island, in which this point of view is also taken and in which it is urged that the Port Authority alone should be responsible for the provision of such wharf accommodation if this is found necessary or desirable.

The report states that the Board of Trade do not desire to offer any observations on the question of the feasibility of the proposed scheme, but they point out that by the Port of London Act, 1908, a single authority was established for the purpose of administering, preserving, and improving the Port, and was so constituted as to

secure adequate representation of the trading and shipping interests of the Port. They recall that by Section 2 of the Act the Port Authority are charged with the duty of taking into consideration the state of the river and the accommodation and facilities afforded in the Port, and of taking such steps as they may consider necessary. The report proceeds to state that the undertakings of the then existing companies were transferred to the Port Authority, and the Authority were further empowered, subject to the provisions of the Act, to acquire and carry on any undertaking affording or intended to afford accommodation or facilities for the loading, unloading, or warehousing of goods in the Port of London, and to construct, equip, maintain, or manage any docks, quays, wharves, jetties, locks, or piers, and buildings, railways, and other works in connexion therewith.

The Board add that they have "no reason to believe that the Port of London Authority have failed or neglected to carry out their statutory obligations, nor does it appear to them that the scheme presents any engineering or commercial advantages which would outweigh the desirability of maintaining the principle of single representative Authority for the whole Port." They submit that it is a matter for consideration whether it is desirable in the general interests of the Port, or consistent with the policy of Parliament, that another body should be formed for the purpose of constructing and carrying on an undertaking of the nature proposed by the Bill.

It must not, however, be imagined that the Port of London Authority is not alive to the value of deep-water wharves. The erection of a deep-water river jetty at Tilbury, 1,000 ft. in length, for the discharge of cargo steamers was sanctioned as far back as 1912, and the construction of the work is proceeding under a contract then made, and it would long ago have been completed but for war conditions; in addition, a passenger landing stage on the riverside at Tilbury was approved in December, 1914, but for the same reason it has not been proceeded with.

FROM OUR CORRESPONDENTS.

CLYDE DISTRICT.

(From Our Own Correspondent.)

American Mission on the Clyde.—The members of the American Mission, who have come to this country to view our war-time activities, spent a couple of days on the Clyde last week. In the course of their tour they visited the shipyards of the Fairfield Shipbuilding Company, Barclay, Curle & Co., John Brown & Co., Harland & Wolff, Yarrow & Co., William Beardmore & Co., William Denny & Brothers, Scotts' Shipbuilding Co., and Russell & Co. Speeches were delivered by members of the mission to the workers at practically all the yards visited, and the party were given a cordial reception wherever they went.

Iron and Steel Institute.—Several changes have been made in the council of the West of Scotland Iron and Steel Institute. Mr. Herbert Beard retires from the presidency of the Institute after having served a number of years. The newly-elected president is Mr. M. L. Simpson, while Mr. W. H. Herdsman and Mr. A. Anderson have been appointed vice-presidents. Mr. Douglas A. MacCallum has been re-elected secretary and treasurer, and vacancies in the council have been filled by the appointment of Mr. C. H. Desch, Mr. Stanley Davis, Mr. D. Greig, Mr. W. G. Russell and Mr. Andrew McCance. A proposal was made at a recent meeting to change the name to the Iron, Steel and Metallurgical Institute of Scotland, but this was rejected by a majority of the members. The Institute has now been in existence for a quarter of a century.

Housing Shipyard Workers.—Considerable regret is felt locally at the resignation of Mr. Alexander Walker from the post of Director of Housing under the Controller-General of Merchant Shipbuilding. Mr. Walker, who was appointed to the position in February last, has already done excellent work in providing housing accommodation and in organising the catering for the many thousands of shipyard workers who have recently come to the district in connection with the scheme for the speeding up of the construction of merchant ships. A number of suitable buildings, including several hotels, have been taken over and fitted up as hostels for the men, and very efficient machinery has been set up for introducing, housing, and feeding the additional workers. It is understood that Mr. Walker's resignation is due to differences of opinion which have arisen between him and the Admiralty officials in London as to the manner in which the work should be carried out.

Merchant Seamen and the War.—At a meeting of the Sailors' Orphan Society of Scotland, held in Glasgow last week, reference was made to the debt which shipowners in particular and the public in general owe to the men of the mercantile marine in these days of sea peril. The annual report of the Society which was submitted, showed that a large number of children of seamen had been made orphans during the past year through the German submarine campaign. At the beginning of the year there were 407 children under the care of the Society, while at the close of the year the number had increased to 466, notwithstanding the number removed from the list. Of a total of 134 children admitted to the Society's care, 66 cases were a direct result of the war. Mr. William Cuthbert, who presided, said that while the Government had a pension scheme for the dependants of men who lost their lives at sea in war time, the amount given from that source was not sufficient in these days of high prices to maintain the families in the degree of comfort which they deserved. Grants given by the Society in supplement of the Government pension were of the greatest service to widows and children.

NORTH-EAST COAST DISTRICT.

(From Our Own Correspondent.)

River Wear Commission.—At the last meeting of the River Wear Commission, Mr. R. M. Hudson presiding, it was reported by the Consultative and Parliamentary Committee that the Commissioners' Bill which sought increased powers with respect to the Authority's graving docks, had been before the Lords Committee, and that there had been struck out the clauses seeking sanction to lease the graving docks. Subject to this alteration, the Committee approved the Bill, and the Consultative Committee had instructed the Commissioners' solicitor to proceed with the measure in the House of Commons as amended, provided that no time limit was introduced for the carrying out of the proposed works. If carried in its amended form, the Bill will enable the Commissioners to execute alterations and extensions to No. 1 Graving Dock.

Shipbrokers' Association.—The newly-formed Shipbrokers' Association, at Newcastle, is to be congratulated upon having secured Mr. W. J. Noble, chairman of the Cairn Line of Steamships, as its first president. He is the president of the Baltic and White Sea Conference and is one of the best-informed men on Tyneside on shipping questions, national and international. His counsel and judgment are highly valued by shipowners and shipbrokers. Ald. R. Mason, a leading member of the North of England Steamship Owners' Association, has been elected chairman; Mr. T. T. Anderson, vice-chairman, and Mr. W. Dodds, hon. secretary and treasurer. There are now some 130 members belonging to the Tyne, the Wear and the Hartlepools, and the prospects for a strong organisation are promising. Similar organisations of shipbuilders have been formed in London, Liverpool, Cardiff and Glasgow.

North-East Coast Institution of Engineers and Shipbuilders.—April, the concluding month of the session, was a very busy one. There were five very largely attended meetings in Newcastle, when papers and lectures were given on such diversified subjects as ferro-concrete ships, ordnance, the work of the Navy, aerial transport, and internal combustion engines. Mr. G. Holt Thomas's address on "The Future of Commercial Aviation" stirred the imagination in a general way, and apart altogether from its technical interest to engineers. He pointed out that Germany already had its long-distance aerial posts, and said he desired to see our Government adopt aerial routes and make preparations for aerial posts all over the world. He spoke of control of the air as well as control of the sea, and said the outstanding value of the aeroplane was its speed. This was one of the most fascinating lectures of the season.

British Shipbuilding.—The members of the Newcastle Rotary listened, on Friday afternoon last, to an address on "The Present Position and Prospective Development of British Shipbuilding," by Sir George B. Hunter, chairman of Swan, Hunter & Wigham Richardson, Ltd. Dealing with the question of control, Sir George said he had never met a shipbuilder who objected to control in the national interest, but while control was necessary, and had been in some ways beneficial, there were some drawbacks, and the greatest of these had been, he thought, to know exactly who the controllers were. Less rigidity in the plan of standardised ships, he thought, would have been of advantage, in view of the fact that well-known yards had had for years their own standard pattern of ship which they might have been allowed to continue to build, instead of being

employed on the new standardised types to which they were not accustomed. Respecting the outlook after the war, Sir George said there would be an enormous demand for everything, shipping included, and his view was that while we, as a shipbuilding country, would be very busy for a while after the conclusion of hostilities, we should ultimately be exposed to greatly increased competition.

THE MERSEY DISTRICT.

(From Our Own Correspondent.)

Cunard Insurance Scheme.—It is understood that the Cunard Steamship Company have extended the scope of their insurance scheme, whereby shippers, merchants, and others may be covered for any loss incurred to their goods during transit on the steamers of the Company on all routes, and under all circumstances.

Shipping Federation Council.—The annual election of the Liverpool district members of the Executive Council of the Shipping Federation held last week resulted in the return of Mr. Ernest Cook (Rogers & Bright, Ltd.), Mr. R. R. Clark (Clark & Grounds), Mr. A. Bicket, Jun. (Kyle Transport Co., Ltd.), and Mr. F. C. Bowring (C. T. Bowring & Co.). The other Mersey representatives upon the Council, previously elected by associations, are Mr. F. T. Harrison (Rankin, Gilmour & Co.), Mr. William Roberts (William Roberts & Son), Mr. A. R. Marshall (MacVicar, Marshall & Co.), Mr. R. Sargeant (Furness, Withy & Co.), and Mr. W. Brownbridge (Furness, Withy & Co.).

Elder Dempster Superannuation Fund.—Captain S. A. Comerrell, Acting Marine Superintendent, presided on Friday over the fourth annual general meeting of the Elder Dempster Superannuation Fund, and expressed the view that the time was now ripe for seafaring members falling under Part I of the scheme to be placed on an equality with the clerical members in Part I. The fund which was inaugurated on January 1, 1914, has met with remarkable success during the four years of its existence, having in that period more than doubled its accumulated funds. These now amount to £158,773, this being an increase during the year of £27,305. The retiring members' committeemen, Mr. C. W. Cook and Mr. R. G. Porter, and the retiring members' auditor, Mr. George Hulatt, were re-elected for the ensuing year.

Liverpool Engineering Society.—At the final meeting of the 1917-1918 Session of the Liverpool Engineering Society, on Wednesday last, the following officers were elected for the ensuing year:—President, Professor J. Wemyss Anderson; Vice-Presidents, Mr. J. Hamilton Gibson (Engineering Manager, Cammell Laird & Co.), and Lieut.-Colonel J. R. Davidson, C.M.G.; Council, Messrs. J. A. Brodie, W. J. Willett Bruce, John Dykes, Ralph E. Gibson, Thomas L. Miller, W. E. Mills, Coard S. Pain, J. Reney Smith, J. B. Wilkie, and J. E. Lloyd Barnes; Hon. Treasurer, Lieut.-Colonel Davidson, and Hon. Secretary, Major T. R. Wilton, R.E.

It was reported to the meeting that the number of members on the roll at the present time is 595, made up as follows:—Six honorary members, 469 members, 36 associate members, 30 associates, and 55 students. The Council have nominated Professor W. H. Watkinson to represent the Society on the Council of the Engineering Training Organisation, which has for its principal object the improvement in co-ordination of engineering training. The Derby Gold Medal has been awarded for the last session for the paper prepared by the late Mr. Arthur Brooker, entitled "Screw Thread Measurement," and the Society's premium goes to Mr. T. L. Norfolk for his paper entitled "Notes on the Design and Construction of Modern Dock Gates."

SOUTH WALES DISTRICT.

(From Our Own Correspondent.)

Apprentices' Bonus Refunded to Shipowners.—A notice was posted on the Cardiff Exchange stating that "Shipowners are informed that the Ministry of Shipping intimate that they have now decided to refund to owners of transports bonus payments to apprentices up to £2 per month, as from January 1, 1918."

Cardiff Shipowners' Provision Pool.—It was reported at a meeting of the Cardiff Shipowners' Pool that stocks were increasing, and there was every likelihood of a further increase. The agent gave a list of the stocks available at Cardiff and Barry, and a particular request was made to shipowners to provision ships out of the pool.

British Channel Institute of Shipbrokers.—An extraordinary meeting of the Cardiff Institute of Shipbrokers was held for the purpose of complying with the legal requirements in regard to the alteration of the title of the Institute. A resolution was passed confirming the special resolution passed on April 9 that the name of the Institute should be changed to that of the Bristol Channel Institute of Shipbrokers (Incorporated).

Oldest Coasting Vessel in the United Kingdom.—Capt. Bride, of Cardiff, has acquired the ketch *Good Intent*, of Bridgewater. The vessel is stated to be the oldest trader in the United Kingdom. She was built in 1790 at Plymouth, and her hull is reported to have been constructed from oak timbers taken out of British men-of-war. D. Mules & Sons, shipbrokers, Cardiff, have been acting as the agents for the vessel for the last sixty years.

Organisation of Coal Exporters.—At a meeting of the Cardiff Chamber of Commerce, the President (Mr. T. J. Callaghan) called attention to the desirability of establishing a Coal Exporters' Association, exclusively for coal exporters. He said it was found that in dealing with Government Departments it was absolutely necessary that they should have an organisation. As individuals they were not listened to. Articles of association for the proposed body have been drafted, and a special meeting of coal exporters is to be convened.

Employment on Weekly Boats.—Mr. W. W. Jones presided at Cardiff on Friday over a joint meeting of owners of weekly boats and representatives of the Sailors' and Firemen's Union from Cardiff, Barry, Penarth, Swansea, and Newport. The meeting was called for the purpose of discussing the rates to be paid for overtime, and the fixing of the hours of labour of men engaged on weekly boats. No decision was arrived at, and it was arranged that the men's representatives should report upon the matter to their respective districts, and that the subject should afterwards be brought before the District Maritime Board.

Proposed Shipbrokers' Pool.—At a meeting of Cardiff Shipbrokers, on April 9, it was suggested that the London Institute of Shipbrokers should be asked to accept the report of the Cardiff brokers' auditor in regard to the *bona fides* of shipbrokers applying for admission to the shipbrokers' pool managed by the London Institute of Shipbrokers, and at a meeting at Cardiff, on April 24, it was stated that the London Institute had agreed to this proposal. With regard to the question of shipbrokers who were engaged in a middleman's coal business being eligible to participate in the pool, this matter is still under consideration.

BELFAST DISTRICT.

(From Our Own Correspondent.)

Concrete Ships.—Two local firms of builders are now engaged in the building of concrete ships, one across the Channel and the other at Warrenpoint. So far nothing has been done in this line in Belfast, but there is some prospect that ere long a start may be made in the port with this class of vessel.

Compulsory Military Service.—The men in the Belfast shipyards and marine engineering shops took no part in the one-day strike against conscription last week. Work went on as usual, the turnout of hands being if anything above the average. The strike was confined to Dublin and the South, and the fact that it was ignored in the North by the shipyard workers, and indeed all workers, speaks well for their patriotism. The conscription question is exciting the keenest interest amongst the men in Belfast. There are few of them who have not relatives in the army, and the attitude of the workers generally is in favour of compulsory military service.

Shipbuilding Output.—Great efforts are being put forward to increase the output of the Belfast yards, and if the present rate of progress be maintained the number of ships delivered during the year will probably constitute a record. A regular series of trial trips is coming off in the near future and the output from the building berths is being steadily maintained. There was an important launch a few days ago—the largest of the year in the port—and other vessels on the stocks are approaching the launching stage. Glorious weather has favoured outdoor work, and at the moment there is an absence of labour trouble. Lord Pirrie, in a communication a few days ago to one of the public boards of the country, referred to the "splendid work that has been done in Belfast since the beginning of the war," and in that work his own concern has taken a leading part.

THE COAL MARKETS.

(From Our Own Correspondent.)

The coal trade is enjoying a comparatively boom period. At all the coal-exporting ports a brisk business is being done, owing to the ample supply of shipping which has been coming to hand. Indeed, in some instances there are vessels waiting turn for berth—a condition of affairs which has been unknown for months previously.

It is, of course, impossible to say how long this animated condition of affairs will last, but present indications are that a busy time is in prospect for the collieries and at the tips until well into May. The bunker coal trade is fairly good, and prices are firmer, though no higher. On the North-East Coast special bunkers are unobtainable except for official requirements, and the market quotation is 30s. per ton. There is a strong demand also for best bunkers, but little of this class of fuel is being put on the market, and even ordinary Durham bunkers are scarce, as operators are able to dispose of this class of coal in other ways. Prices rule from 24s. to 27s. 6d. The bunker coal trade of South Wales is not unsatisfactory. Prices are unchanged.

The North-East Coast coal trade has been unusually brisk lately, and there is every indication that the present condition of affairs will last for some time—probably until the end of May. All the pits are working at full pressure, and coals of all descriptions, with the notable exception of smalls, are being eagerly snapped up. A plentiful supply of orders is in evidence, and neutral countries are evincing a desire to buy, but it is unlikely that they could do so except at an appreciable advance on market prices.

Steam coals of all descriptions are moving off very briskly, assisted by a plentiful supply of tonnage, and the collieries are unable to meet some orders for prompt supplies of fuel. The same conditions apply to Durham gas and house coals, which are all offered very sparingly, as the collieries have enough orders on hand to keep them going until the middle of this month at least. For coking coal and nuts the home demand is so strong that nothing is left over for export.

Approximate quotations are for Best Blyth steams, 30s. to 32s. 6d., and smalls, 18s. 6d. to 20s. 6d.: Tyne primes, 29s. 6d. to 32s., and smalls, 25s. to 27s. 6d.; second steams, 25s. 6d. to 29s. 6d., and smalls, 18s. 6d. to 20s. 6d.; unscreened steams, 24s. to 25s.; North Northumberland steams, 28s., and smalls, 20s.; smithies, 25s. to 30s.; nuts, 32s. 6d. to 33s. 6d.; gas coals, 23s 6d. to 30s.; coking coals, 17s. to 25s.; home coal, 20s. to 22s. 6d.; special bunkers, 30s.; bunkers, 24s. to 27s. 6d.; blast furnace coke, 35s. 6d.; and foundry coke, 42s. 6d. to 45s.

The better tone of the South Wales coal trade is fully maintained, and here also prospects are favourable to the boom period continuing through the present month. The collieries are all booked up with orders to the full extent of their outputs for the next week or two, and prompt supplies are difficult to obtain. At the South Wales ports the arrivals of shipping have been very good, and loading has been proceeding very briskly. The special requirements for all the best classes of steam coal are exceedingly heavy, and private operators are only able to secure inferior grades and smalls, of which latter there is still an abundant supply.

Bituminous coals are in strong demand inland, and patent fuel is also an active market, the production still failing the demand. The coke market is, however, rather easy.

Prices are, approximately, for best steams, 35s. 6d.; second steams, 33s. 3d. to 34s.; ordinary steams, 32s. 6d.; drys, 31s. to 32s. 6d.; steam smalls, 20s. 6d. to 24s.; washed smalls, 25s.; best large Black Veins, 32s. 6d.; Western Valleys, 31s. 6d.; Eastern Valleys, 30s. 6d. to 31s. 6d.; nuts, 30s. 6d. to 32s. 6d.; duff, 16s. 6d. to 20s. 6d.; house coal, 33s. 3d. to 35s. 6d.; No. 3 Rhonddas, large, 33s. 3d.; and smalls, 28s. 6d.; No. 2 Rhonddas, large, 29s. 6d., and smalls, 19s. 6d. to 21s. 6d.; through and through coal, 24s. 6d to 26s.; gas coal, 23s. 6d. to 27s. 6d.; patent fuel, 32s. 6d.

The Hull coal market remains quiet, so far as new transactions are concerned, but a great deal of fuel is being disposed of on contract account. The chief difficulty facing operators is how to obtain sufficient supplies. Though the collieries are working all out, the amount of coal coming forward is not nearly sufficient for all requirements. The official demands are so heavy that only a minor proportion of fuel is left for private consumers. Inland, the demand is very strong, while a good quantity of fuel is sent to London and the south.

The Scottish coal markets are also enjoying a period of great activity, and all the collieries are working full time. The consumption of coal inland seems to grow, leaving very little for export, so that the loss of a great deal of the export business is not now felt. This is, at any rate, the case in the West of Scotland, where actually there is not now sufficient coal available for export to satisfy the exporters' requirements. In Fifeshire and the Lothians, too, the collieries are fully employed, and their entire outputs are readily taken up.

Prices, subject to the addition of 2s. 6d. per ton war wage increase, are, for splint coal, 28s. to 30s.; Hartleys, 29s.; Ells, 26s. 6d. to 28s.; screened navigations, 28s. to 30s.; unscreened navigations, 25s. 6d. to 29s.; screened steams, 27s. 6d.; and nuts, 21s. to 23s.

The Midland coal trade is remarkably brisk, and owing to the miners comb-out there is not enough coal being put on the market to satisfy all needs, which are as great as ever.

At Liverpool, steam coal is in considerable request, especially for export, and the movement of coal has been much facilitated by the freer movement of shipping. For the time being the demand has overrun the supply, and all the production of the pits in Lancashire, Yorkshire and Derbyshire is being absorbed very quickly.

On the London coal market the feature is the decreased demand for hard coal, consumption having fallen greatly as a result of the fine weather. Consequently, merchants are adding to their stocks. A good quantity of fuel continues to come on the market, and is all taken up, steam coal especially being in demand.

THE FREIGHT MARKETS.

(From Our Own Correspondents.)

London.—Rates from all directions homewards remain steady at the high rates reached recently, but the amount of business done on the Baltic Exchange has been small. From the River Plate a good demand is in evidence for all descriptions of tonnage to load for the United States, while to the United Kingdom rates remain at 225s., and to France, 250s. The ports of the North American Atlantic seaboard require tonnage on net form of charter, for which 230s. is offered to the United Kingdom, and 260s. to France, while to the French Mediterranean 330s. would be conceded, and to West Italy 360s. Gulf loading would come at 30s. additional. For heavy grain, the figures are 50s. from the Northern Range to the United Kingdom, 56s. 3d. to France, and 75s. to West Italy. For coals, 80s. offers from Virginia to the Plate, and 84s. to Brazil, while nitrate business is possible on the basis of 180s. to 185s. to the United Kingdom. There is no change in the rates from the East. Karachi would pay 250s. on scale basis to the United Kingdom, Bombay, 275s. on deadweight to the same destination, and 400s. to the Mediterranean, and the Madras coast offers 550s. to Marseilles for kernels. The rice ports of Burmah and Saigon indicate 500s to the United Kingdom or France for kernels. Australia to the United States could be done at 130s. Tonnage is being steadily taken up by the Mediterranean ore and phosphate ports at unchanged rates, while Bay business has been done at 17s. Bordeaux and 20s. Bayonne to Bristol Channel.

Glasgow.—Business has been inactive on the Glasgow market since our last report as charterers were unable to secure the requisite tonnage. Rates in practically all trades remained firm. Among the fixtures reported were:—Bordeaux, 1,000, Bristol Channel, 17s., prompt; Bayonne, 1,500, Bristol Channel, 20s., prompt; Swansea to Rouen, neutral, 1,400, 48s. 9d.; Mersey to Isafjord (Iceland) ship, 1,100, coal, kr. 200; time charter, general trades, 43s. 6d. 12 months; and Virginia to Rio de Janeiro, about 84s. 6d., coal.

Newcastle-upon-Tyne.—Those collieries in Northumberland and Durham, whose output is normally mostly for export, are exceedingly well supplied with requisitioned tonnage at the present time, practically the whole of their production being taken up on Government and Allied account, leaving exceedingly little—and that little at advanced prices—for the satisfaction of the considerable demand from neutral customers. The congestion of prompt loading turns is co-operating with a scarcity of neutral shipping on offer to prevent much being done in the way of chartering in the open freight market. In point of fact, excepting for a fixture of a 5,000-ton vessel for the River Plate at 120s., with loading options over the North-East Coast, transactions recorded are wholly confined to Scandinavian destinations. Christiania has been twice done at 150 kr., Halmstad

once at 165 kr., and Gothenburg four times at rates ranging from 160 kr. to 165 kr. From all other directions there is an unabated demand at the following typical rates:—Stockholm, 170 kr. to 180 kr.; Bilbao, 300s. to 310s.; Lisbon, 115s.; Gibraltar, 100s.; and Barcelona, 440s. There have, however, been no fixtures recorded, and, under these circumstances, the rates quoted must be regarded as more or less nominal, according to the periods of time that have elapsed since business was last done from these destinations.

Liverpool.—There is a brisk demand for tonnage at the coal port, and while neutrals could get extreme rates, chartering is slow and orders difficult to fill. Otherwise outward freights are quiet and unchanged. There is also a good demand for time charters, and 35s. continues to be paid for States-West Indies trade, and 43s. 6d. has also been paid for 12 months in the general trades. Homeward freights are generally unchanged. North America is less active, with tonnage in short supply. Rates for grain continue at 50s. to United Kingdom, with the usual increases for France and Italy. Net charters are still 210s. New York to Liverpool, and 250s. to French Atlantic. Eastern markets maintain a good demand, and full rates are offering from Rice ports, Madras Coast and Java. Bombay quotes 400s. to Genoa on deadweight, but with little free tonnage in sight scarcely any business is done. There is a good demand for tonnage at the Mediterranean ore ports. River Plate homewards is unaltered at 225s. to United Kingdom, but nothing doing.

Cardiff and Swansea.—Conditions on the market have been very quiet. There has been no lack of inquiries, but business has been confined to the limitation ports at maximum schedule prices. The authorities have had ample supplies of tonnage for several weeks past, and prospects continue bright in this direction. Previous rates are quoted for neutral destinations, but no transactions were reported. The only fixtures disclosed on the Cardiff market were: Caen and Honfleur at 48s. for neutral steamers. The Swansea market has shown a good deal of activity. Numerous orders are on the market, but business has been practically confined to the French ports. The following fixtures were reported: Caen, 46s. 6d.; Havre, 47s. 3d.; Trouville, 48s.; and Rouen, 48s. 9d.; all neutral vessels. Four small sailing craft were fixed at 106s. 3d. coal, 107s. fuel, two for Morlaix and two for St. Valery-sur-Somme.

COMPANY REGISTRATIONS.

Campbeltown Ferro-Concrete Shipbuilders, Ltd.—Capital, £5,000, in £1 shares. Objects as indicated by the title. Signatories:—

C. M. Mander, 18, Ascot Road, Tooting Junction, S.W., clerk.
R. Swinge, 107, Dunedin Road, Leyton, E.10, typist.

Table "A" mainly applies. Solicitor: T. Symington, 94, Hope Street, Glasgow. Private company.

Allison Brothers, Ltd.—Capital, £5,000, in £1 shares. Objects: To take over the business of shipowners, shipbrokers, shipping and insurance agents, loading brokers, barge owners, &c., and to enter into an agreement with W. and A. M. Allison and A. H. Weight. Signatories:—

F. W. Allison, 59-60, Gracechurch Street, E.C.3, shipping agent.
A. M. Allison, 59-60, Gracechurch Street, E.C.3, shipping agent.
A. H. Weight, 59-60, Gracechurch Street, E.C.3, shipping agent.

The first directors are:—F. W. Allison, A. M. Allison, and A. H. Weight. Registered office: 59-60, Gracechurch Street, E.C. Private company.

Time-Charterers Mutual Protection Association, Ltd.—Registered April 22, as a company limited by guarantee, to aid members in recovering or enforcing claims in respect of hire, freight, dead freight, demurrage, short delivery, detention, salvage, contributions in respect of general average, the purchase, sale, contracting and hire of ships, goods and merchandise, and otherwise to defend or aid in defending members in respect of claims made upon them, &c. Signatories:—

J. Slater, 7, East India Avenue, E.C., colliery proprietor and shipowner.
J. W. Thomas, 49-50, Exchange, Cardiff, shipbroker.
R. W. J. Sutherland, Boston Buildings, Cardiff, coal exporter.
S. W. Oakley, 52, Gracechurch Street, E.C., shipowner.
G. Lewis, 34-40, Ludgate Hill, E.C., shipowner's manager.
E. Fitzgerald, 4, Fenchurch Avenue, E.C., shipbroker.
C. Graham, 20, Great St. Helens, E.C., shipbroker.

Registered office: 30, Great St. Helens, E.C.

COMPANY MEETINGS.

Standard Marine Insurance Company, Ltd.—The forty-sixth ordinary general meeting was held in Liverpool, on April 22.

The Chairman (Mr. F. W. Pascoe Rutter), in moving the adoption of the report and accounts, said that their 1916 account was a record one. In 1917 they had beaten that record both in premium income and the amount of profit yielded therefrom. Briefly, the figures for the past year were as follows:—Net premiums, £541,591, representing an increase of £61,025; losses paid and outstanding, £347,764; expenses, £46,640; with the net result that after charging a reserve of 40 per cent. of the premiums for unexpired liability, the underwriting surplus amounted to £122,777. Interest on investments amounted to £33,074. Including balance brought forward, and after setting aside £70,000 for income-tax and provision for excess profits duty, the available balance was £146,349. To cover the depreciation in investments they had written off £18,000, and were transferring £50,000 to reserve fund, thus increasing it to £400,000. As in previous years, they had written a moderate war risk account, and, thanks mainly to the repression of the U-boat activities during the second half of the year, they had again to record a satisfactory profit from this section of the business. On the other hand, losses from marine perils—not actual war risks, but brought about by war conditions—had been very severe. The number of marine losses to steamers of British nationality during 1917 were nearly 50 per cent. more than in 1916. Collision losses, due largely to navigation in the war zone without lights, had greatly increased, and it was calculated that the total losses from that cause during the winter months of 1917-18, were four times the number during the corresponding period of 1913-14. As to the future, it was always difficult and often unwise to prophesy, but it was quite clear that the prolific experience of the past year or two could not continue indefinitely. War risk rates of premium had already been cut down, and in any case the premium income from that source must obviously disappear with the declaration of peace. Then would probably come the struggle to maintain revenue. A number of underwriting concerns of diverse calibre had been started during the war, and some companies of neutral origin had also become very active competitors. They must, therefore, take it with equanimity if there should be before long a sensible diminution in both marine insurance income and profits. The battle would then go to the strong, and they could rely with confidence upon the quality of their business and the discrimination of their underwriting to maintain the first-class position they had made for themselves.

Mr. J. G. Nicholson seconded the motion, which was carried.

COMPANY REPORTS AND DIVIDENDS.

African Steam Ship Company.—The directors recommend the payment on May 10 of a dividend of 5 per cent. for the six months ended December 31, 1917, which with the interim dividend of 5 per cent. paid in October last makes a total payment of 10 per cent. for the year 1917, free of income tax.

A.G. Neptun Schiffswerft u. Maschinenfabrik, Rostock.—After allowing £25,700 (£1,510) for depreciation, the net profit is £36,000 (£27,200 last year). From this, £17,200 (£2,450) is transferred to special reserve, and a dividend of 10 per cent. is again paid. A number of orders have already been booked for execution after the war.

Austriawerft (Stabilimento Tecnico Triestino).—A dividend of 15 per cent. is declared for 1917 on both the original and priority shares, the distinction between which has no longer any meaning (in view of the present financial position of the company), and is therefore to be definitely removed. It is proposed to raise the capital to £500,000.

Reliance Marine Insurance Company, Ltd.—The report of the directors states that the balance of 1916 underwriting account brought forward was £154,884, the settlements made on that account during the past year being £98,392, and the account has been closed by transferring £17,000 to suspense account. The interest for 1917 amounts to £18,510, and there remains at credit of profit and loss a balance of £100,565, after transferring a sum of £10,000 to fire account to form the nucleus of a fire reserve fund. To meet depreciation in value of investments the directors have written off £50,000, of which £26,000 had already been provided for in investment reserve

fund, and the balance of £24,000 is transferred from profit and loss account, leaving £76,565 at the credit of that account. An interim dividend of 4s. per share, less income tax, was paid in July last, and the directors propose to pay a further dividend of 4s. per share, less tax, making 20 per cent. for the year, carrying forward £61,565 to credit of next account, which is subject to income tax and excess profits duty. Net marine premiums taken for the year amounted to £266,946, and claims settled to £85,520 leaving, after deducting expenses, &c., a balance of £164,200.

Robert Stephenson & Co. (1914), Ltd.—The report for 1917 states that, after providing £10,000 for depreciation, the profit is £25,158 (compared with £20,177 for 1916). To this is added a balance of £28,756 from the previous year (compared with £27,103), making a total of £52,914. It is proposed to pay a dividend of 5 per cent. (compared with 4 per cent.), to place £10,000 to reserve, and to carry forward £32,601.

Vulcan-Werke Hamburg-Stettin A.G.—The report states that expectations concerning 1917 were realised and a dividend of 8 per cent. is again recommended. The net profit amounts to £73,200 (compared with £72,800 for 1916) and is distributed as follows: staff pension fund, £7,350 (£4,900); endowment fund, &c., £3,100 (£2,190); taxes, £1,000 (£1,100); dividend, £5,880 (as before); bonuses, £3,250. Interest on bonds amounted to £21,100 (£17,000). The principal items on the balance sheet are: debtors, £2,650,000 (£2,410,000 last year); stocks of material and work completed and in hand, £5,140,000 (£2,350,000); securities, £132,000 (£72,600); payments on account and current creditors, £7,700,000 (£4,850,000); surety account, £950,000 (£980,000).

Eagle Oil Transport Company.—The profits for 1917 were £264,101 (against £304,869), from which £101,495 has been transferred to depreciation reserve account. It is proposed to pay a final dividend of 1 per cent. on the preference shares, making 7 per cent. for the year, and a final dividend of 4 per cent. on the ordinary shares, making 7 per cent. for the year, and to carry forward £48,922 (against £42,916). The cost of operating the fleet has continued to increase, but the charterers have again made a substantial contribution towards the increased expenses. The length of time, however, during which vessels have been under repair in consequence of war conditions, together with the fact that the fleet has suffered reduction through enemy action, has resulted in a decrease in the profits. The amounts recovered by way of insurances on the tonnage lost are in excess of book value, and should enable the company as soon as conditions may allow to effect replacement of that tonnage on its original earning basis.

QUESTIONS IN PARLIAMENT.

Lighthouses in War Time.

Sir. J. Harmood-Banner, on April 24, asked the Secretary to the Admiralty whether there had been any adoption by France, Italy, or Great Britain of improved service of light on lighthouses and lightships, so as to avoid the silhouetting of ships when coming under the forces of light; and whether the successful use of an improved system was in force by all the Allies.

Dr. Macnamara: All powerful lights in the United Kingdom are very considerably reduced in clear weather, to obviate the silhouetting effect, and I understand the French and the Italians have also done the same in certain instances. This has greatly lessened the danger, but has not entirely got over it, and further action is under consideration.

Speed of Vessels on the Clyde.

Mr. Watt, on April 25, asked the Secretary to the Admiralty whether any complaints had been received from any trades unions or associations on the River Clyde as to the risks of life and limb in the timber ponds and in towing timber there on account of the excessive speed of passing vessels; and, if so, would the public interest and the necessities of the war permit of any modification of such speeds.

Dr. Macnamara: I have ascertained that a letter was received by the local naval authorities on the 22nd of last month from the Greenock and Port Glasgow Rafters' Trade Union regarding the matter referred to, and steps were thereupon taken to communicate with officers in charge for the purpose of securing observance of the instructions that vessels should proceed at a moderate speed in the river; the attention of pilots has also been drawn to the matter.

A Meeting of Protest at Cardiff.

Colonel Sir F. Hall, on April 25, asked the Parliamentary Secretary to the Board of Trade whether his attention had been called to a meeting of protest of seamen held at Cardiff, on April 20, against the employment of the son of a German in a shipping office there; and whether, in view of the importance of taking every possible step to safeguard the seamen of the mercantile marine, he would agree without delay to take whatever measures were necessary to remove all aliens from British ports, so as to prevent any risk of shipping movements being communicated to the enemy.

Mr. Wardle: The attention of my right hon. friend has been called to the particular case referred to, and it is being dealt with. As regards the general point raised in the last part of the question as to the presence of aliens in the ports, I will communicate with the Home Secretary.

Pay of Dockers at Dublin.

Mr. Anderson, on April 25, asked the Financial Secretary to the War Office whether he was aware that the military authorities in Dublin had refused to pay the standard wage paid by private employers to dockers at the port of Dublin, and had sent soldiers to do the work of any docker refusing to accept less than a standard wage; and what action it was proposed to take in this matter.

Mr. H. Forster: There seems to be some misunderstanding in this matter. I am not aware of any refusal to pay the standard rate of wages. Military labour has been used to unload military cargoes because civilian labour is not obtainable. The responsibility for the rate of wages paid to dockers rests, I believe, with the Ministry of Shipping.

Control of Canadian Shipments.

Mr. Watt, on April 24, asked the Secretary to the Ministry of Food whether, when merchants in this country made the application for allotted space to bring tinned apples from Canada, they were referred by his Department to Mr. Smith, 165, Broadway, New York; if so, would he explain how it was that anyone in that city had control over Canadian shipments to this country; and could he say whether Mr. Smith was likely to grant our merchants any licence to ship the above merchandise urgently wanted by the people here.

Mr. Clynes: While it is impossible to give priority to secondary foodstuffs over cereals, meat, bacon, and other articles of primary importance, it sometimes happens that a ship has a small amount of space unexpectedly available for shipment of miscellaneous foods. In order that no such space shall be wasted, private shippers are advised to instruct their agents in America to notify the representative of the Ministry of Food in that country of all foodstuffs available for shipment. Sir Guy Granet, who has succeeded Mr. Owen Smith as representative of my Department in North America, is also Chairman of the Allied Provisions Export Commission, whose offices are at 165, Broadway, New York.

Output of Clyde Shipyard.

Colonel Sir F. Hall, on April 26, asked the Secretary to the Admiralty what was the extent of the reduction in output of the men concerned at the shipbuilding yard on the Clyde where the carpenters employed on a troop-leave ship and other vessels struck work early in the year against continuing the system of piece-work that had been in operation for many years, and only resumed their duties, at the instance of the Admiralty, on condition that time-work should be substituted for piece-work.

Dr. Macnamara: Inquiries have been made, and the firm state that certain alterations made in the working of the shop have made it impossible for them at the moment to form any definite opinion as to the relative output since the change to time work has been in operation. But they hope to be in a position to furnish the information later.

Sir F. Hall: I will repeat the question in a fortnight, when, perhaps, the right hon. Gentleman will have the information.

The Land for National Shipyards.

Mr. Watt, on April 25, asked the Secretary to the Admiralty why his department was arranging through the Lands Directorate of the War Office to make the arrangements for the occupation and purchase of areas required for the national shipyards, in view of the fact that the Land Valuation Department of the Inland Revenue had up till now always done this work for the Admiralty with entire satisfaction and without cost, whereas the Lands Directorate of the War Office invariably engaged outside valuators at considerable fees to do this work; and was this change made in the interest of war-time economy.

Dr. Macnamara: Arrangements for the occupation and purchase

of lands and buildings required by the Admiralty are made through the Lands Valuation Department of the Inland Revenue, but as the arrangements for purchasing the sites of the national shipyards were inaugurated by the staff of the Inland Water Transport Department of the War Office, the Lands Branch of that Department undertook the negotiations, and it has not been thought desirable to interfere with this arrangement.

Dependants of Merchant Seamen.

Replying to Mr. Peto, on April 24, Dr. Macnamara (Secretary to the Admiralty) said: It has been agreed as from this date grants and allowances to the widows and dependants of officers and men, and disablement grants and allowances to officers and men of the mercantile marine who have signed on or may sign on in the Service and pay of the Admiralty for the period of the War on vessels to which the provisions of Section 90 of the Naval Discipline Act have been applied, will be placed upon the Service scales as administered by the Pensions Ministry. There appears to be some doubt as to whether under statutory authority that Ministry is entitled to apply the sums voted to it by Parliament for this particular purpose. That point is being cleared up. But if it be found that the Ministry is not so empowered, steps will be taken to regularise whatever expenditure may be necessary under the concession which I have now announced.

Mr. Peto: Do I rightly understand that this fresh arrangement will have no retrospective effect, and that widows whose husbands have lost their lives before this date will not get the Service rate of pension?

Dr. Macnamara: It is not retrospective as regards arrears, certainly, but already the widows and orphans of men who have signed on for the period of the war are getting the Service rate, though widows and orphans of officers are not; neither are men nor officers themselves as regards disability. They will all be on the Service scale as from this date.

Commandeered German Ships.

General Croft, on April 29, asked the Parliamentary Secretary to the Shipping Controller whether all German ships in the ports of the British Empire and of the Allies had now been commandeered.

Sir L. C. Money: As regards the German ships in the ports of the British Empire the answer is in the affirmative. The Controller is not aware of any German ships in the ports of the Allies which have not been commandeered.

Return of Submarine Losses.

Sir Fortescue Flannery, on April 29, asked the Secretary to the Admiralty whether, in the absence of weekly publication of the tonnage of ships sunk by enemy submarines, he would publish each week a statement of the number of British ships attacked, along with such general information of the results as might be of public interest.

Dr. Macnamara: The revised method of publishing losses which was decided on after very full consideration and consultation with our Allies was only recently brought into force, and to amplify it in the manner and to the extent proposed is considered undesirable.

Sir Fortescue Flannery: Does that mean that there will be intervals of one month before information is given?

Dr. Macnamara: Yes.

Interned Merchant Service Officers in Germany.

Answering Mr. Peto, who, on April 29, asked how many masters and officers of British merchant vessels were interned in Germany in military prisoner-of-war camps and places other than the civilian camp at Ruhleben, Mr. J. F. Hope (representing the Prisoners of War Department) replied: I am informed that the number is approximately 378. The German Government are well aware of our views on this matter, and the situation created by their refusal to repatriate certain classes of British merchant service officers and seamen under the various civilian agreements is engaging the serious and immediate attention of His Majesty's Government. A number of British merchant service officers have recently been repatriated or transferred to Switzerland or Holland.

FORTHCOMING EVENTS.

Institution of Electrical Engineers.—Thursday, May 9, meeting at the Institution of Civil Engineers, Great George Street, Westminster, S.W., at 6 p.m. Discussion on "A British Electrical Proving House," with an introductory paper by C. Turnbull.

NEWS PARAGRAPHS.

Béliard, Crighton & Co.—This French firm of ship repairers, whose extensive works in Antwerp have been pillaged and liquidated by order of the German military authorities, have opened a branch establishment in Havre. In their establishment at Antwerp the firm employed 1,100 workmen.

Norwegian Shipping.—A Reuter message from Washington states that the United States Shipping Board has chartered 400,000 tons of Norwegian shipping, which it will employ on non-hazardous trade routes, principally with South American ports, thus releasing American ships for the danger zones.

Largest Mediterranean Graving Dock.—According to the *Corriere della Sera*, the largest graving dock in the Mediterranean will be at Naples. The Council of Ministers has approved the agreement for the concession for its construction and exploitation by the firm of Carlo Enriotti. The cost is estimated at about 15,800,000 lire.

Shipyard Labour.—In reply to questions in the House of Commons, on Tuesday, it was stated that 6,000 of the promised 20,000 men had been released from the army for shipbuilding and marine engineering. A number of men fit for general service were to be taken from these industries. The Shipyard Labour Department was undergoing part of the general reorganisation under the Controller-General of Merchant Shipbuilding

Training Boys as Seamen.—At a meeting of the Marine Society last week, Admiral Sir Lewis Beaumont, G.C.B., K.C.M.G., presiding, a report was submitted showing that 244 boys were on board the *Warspite* on January 1, and that 12 had since been admitted. Since the training ship had been destroyed by fire, 51 boys had been sent into the Navy, 32 had been drafted into the merchant service, 65 were on board the *President* (late *Buzzard*), lent by the Admiralty, 29 had been transferred to the *Exmouth*, and 52 had been discharged to their homes. Nine medals had been awarded to old *Warspite* boys, eight of whom were in the Navy.

German in Responsible Position.—A meeting of Cardiff seamen was held recently to protest against the action of the Board of Trade in allowing the son of a German to be in a responsible position in a Cardiff shipping office. The men decided, in view of the risks which seamen are incurring, to demand the immediate removal of the official, and to pledge themselves to refuse to sign on for another vessel in the mercantile marine office at Cardiff until the official was removed. A copy of the resolution was sent to Sir A. Stanley, President of the Board of Trade. As the result of the protest, Mr. S. H. Doddington, the son of an unnaturalised German, is no longer to be employed as deputy superintendent at the Cardiff Board of Trade Shipping Office. Mr. Doddington has three brothers in the British Army.

Increased American Shipbuilding.—According to *The Times* Washington correspondent, it is understood that after a careful survey of the situation, Mr. Schwab, the newly-appointed Chief Shipbuilder to the American Government, is confident that the production this year of steel vessels will largely exceed 3,000,000 deadweight tons, and may even approach 4,000,000. Mr. Schwab is also turning his attention to concrete ships, and has ordered a committee of experts to leave Washington this week for San Francisco, where the *Faith* is being fitted with engines and machinery for its trial trip on May 1. Mr. McAdoo, as Director of Railways, in taking over the canal system, has ordered a very large number of concrete barges, sufficient to carry 10,000,000 tons freight, to relieve the congestion on the railways. The Skinner & Eddy Company, of Seattle, have just launched a standard 8,100-ton ship in 55 working days after laying the keel, and expect to complete the fitting of the engines and machinery and put the vessel in service in 32 working days, making a total of 87 days from the laying of the keel to the trial trip.

Shipbuilding Feat in America.—The following account appeared in *The Times* last week of the launching of three large steel steamers at Oakland, California, on the same day, which is described as "the first triple launching in the history of the world." The vessels were the *Oakland*, the *Shintaka*, and the *Aniwa*, built by the Moore & Scott Company, of 9,400 tons each, and so represented a total of over 28,000 tons. The keel of the *Oakland* was laid on November 12, and the keels of the *Shintaka* and *Aniwa* on

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"SHIPBUILDING AND SHIPPING RECORD" TABLE OF SHIP SALES.

Name and Type.	Tonnage.	Dimensions. Draught in ( ).	Sold by, to	Builders, hull and year.	Machinery and builders.	Remarks.
Aspasia (steam trawler)	342 gr. 141 net 500 d.w.	140½′ × 24′ × 13¼′	Iceland Steam Fishing & Fish Curing Co., to W. G. Allnutt, Hull	Smiths' Dock Co., Middlesbrough (1916)	13, 22, 36½ × 26 (Smiths' Dock Co.)	—
Chase S. Osborn (tug)	492 gr. 334 net	128½′ × 25¼′ × 12½′	A. W. Duckett & Co., New York, to buyers not stated	Johnston Bros., Ferrysburg, Mich. (1906)	21, 42 × 36	Price about £30,000.
Cromwell ..	439 gr. 171 net	155¼′ × 25′ × 10½′ (12′ 2″)	Shankland & Co., London, to Iceland Shipping Co., London	R. Williamson & Son, Workington (1890)	Triple Expansion. (Dunsmuir & Jackson, Ltd., Glasgow)	U.K.–Iceland trading.
Helredale, ss. (single dk.)	3,567 gr. 2,253 net 6,400 d.w.	346½′ × 50½′ × 23′ (22′ 2″)	Helredale S.S. Co., Whitby, to the Turnbull Scott Shipping Co., London	R. Craggs & Sons, Middlesbrough (1906)	25, 41, 67 × 45 (Blair & Co., Stockton)	—
Montreal ..	185 gr. 220 d.w.	100′ × 18½′ × 9′	Shankland & Co., London, to Iceland Shipping Co., London	—	Paraffin Motors. (Turbinia Engineering Co. (1916), Ltd., Lowestoft)	U.K.–Iceland trading.
Oliver ..	373 gr. 144 net	152′ × 23½′ × 9½′	Shankland & Co., London, to Iceland Shipping Co., London	Hall, Russell & Co., Aberdeen (1912)	Triple Expansion. (Hall, Russell & Co.)	U.K.–Iceland trading.
Uskside, ss. (well dk.)	2,209 gr. 1,378 net 3,300 d.w.	290′ × 40½′ × 18½′ (18′)	Uskside S.S. Co., Newport, to the Pelton S.S. Co., Newcastle	J. Priestman & Co., Sunderland (1913)	21, 35, 57 × 39 (North-Eastern Eng. Co., Sunderland)	—
Balmes, ss. (ex *Montclair*)	3,794 gr. 2,345 net	370′ × 46′ × 25¾′ (23′)	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	A. McMillan & Son, Dumbarton (1898)	25⅞, 42, 68 × 45 (D. Rowan & Son, Glasgow)	—
Barcelona, ss. (spar dk.)	5,574 gr. 3,663 net	415′ × 53′ × 20¾′ (24′)	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	C. Connell & Co., Glasgow (1908)	30, 50, 82 × 60 (D. Rowan & Son, Glasgow)	—
Cadiz, ss. (spar dk.)	5,617 gr. 3,667 net	414½′ × 53′ × 20′ (24′)	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	C. Connell & Co., Glasgow (1908)	30, 50, 82 × 60 (D. Rowan & Son, Glasgow)	—
Catalina, ss. (spar dk.)	4,796 gr. 3,491 net	415′ × 48′ × 21¼′ (25′ 3″)	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	C. Connell & Co., Glasgow (1893)	29, 46, 74 × 51 (Dunsmuir & Jackson, Glasgow)	—
Conde Wifredo, ss. (spar dk.)	3,774 gr. 2,765 net	363′ × 44′ × 20′	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	J. L. Thompson & Sons, Sunderland (1889)	31, 51, 83 × 54 (J. Dickinson, Sunderland)	—
Infanta Isabel, ss. (shade dk.)	8,182 gr. 4,118 net	459½′ × 58½′ × 29½′	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	Russell & Co., Pt. Glasgow (1912)	24½, 35, 50, 72 × 51 (D. Rowan & Co., Glasgow)	—
Martin Saenz, ss.	3,466 gr. 2,532 net	353′ × 42′ × 20¾′	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	C. Connell & Co., Glasgow (1890)	27, 43, 69 × 48 (Dunsmuir & Jackson, Glasgow)	—
Miguel M. Pinillos, ss. (spar dk.)	2,998 gr. 2,125 net	330½′ × 41¼′ × 28½′	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	J. Laing, Sunderland (1885)	25, 40, 66 × 45 (J. Dickinson, Sunderland)	—
Valbanera, ss. (spar dk.)	5,099 gr. 3,291 net	399¾′ × 48′ × 21½′	Pinillos, Izquierdo & Co., Cadiz, to Sota y Aznar, Bilbao	C. Connell & Co., Glasgow (1906)	29, 46, 74 × 51 (Dunsmuir & Jackson, Glasgow)	—

November 16. All three were launched within 40 minutes, on March 14, the time occupied in the construction of the hulls thus being only about 17 weeks. It is stated that the launchings represented the labour of 4,000 men working continuously day and night in eight-hour shifts from the time that the keel blocks were put in position. At the date of the launchings the builders were more than 30 days ahead of scheduled time, and they promised to maintain work at the same rate, so that the delivery of the vessels would be from 40 to 48 days in advance of the date provided for in the contracts.

SHIPPING AND OTHER MEETINGS.

May 4 (*Sat.*)—**Spillers & Bakers, Ltd.** (Annual), Cardiff, at noon.

May 8 (*Wed.*)—**John I. Thornycroft & Co., Ltd.** (General), Winchester House, Old Broad Street, London, E.C., at noon.

May 8 (*Wed.*)—**Sutherland Steamship Co., Ltd.** (General), at Company's Offices, 38, Sandhill, Newcastle-on-Tyne, at 2.30 p.m.

SHIPPING SHARE MARKET.

The reception of the Budget proposals on the Stock Exchange was not unfavourable, and although some criticism has been directed against the twopenny stamp on cheques, it is not a direct influence on markets. The amount of business is still on the negligible side, but prices of most shipping descriptions have kept very firm, and there is no pressure of any kind to sell. This fact is the more remarkable in that it is fully recognised by investors that the effect of the Blue Book rates under which shipping companies are now working must tend to restrict profits for the coming year, and for any future years in which Government control continues. Brokers take the view that investors have in most cases put away the stock with a view to permanent investment and substantial dividends when the excess profits tax is taken off after the war. Among the "heavy" shares, Peninsular and Oriental deferred are quoted ex the dividend at 326–331, after being 332–337 cum. Royal Mails are still well supported at 120, and there have been dealings in Clan Line shares at as much as 45, the dividend bringing in purchasers. Among the smaller shares those of the Tyne-Tees Shipping have been in demand at 20s., which compares with about 16s. 3d. early last month. It is unofficially stated that developments in the company's business are to be announced shortly. The company has always been a steady dividend-payer of about 10 per cent., and its position has considerably improved since the outbreak of war, despite the general disorganisation of its business, which was mainly with the Northern ports of the Continent. The demand for the shares mainly comes from Newcastle. Cairn Lines, Canada Steamship, Furness Withy, Court Lines, and Cunards are other shares in which there has been some activity. The shipbuilding section has been quiet, which may be attributed to the uncertainty respecting the Budget, and prices have had a tendency to droop. No occasion for uneasiness need be feared by holders, and the slight reaction may prove to be to the good of the market.

SHIPPING, SHIPBUILDING, ENGINEERING AND MARINE INSURANCE SHARE LIST.

SHIPPING.

Name.	Share and paid.	Extreme quotations, 1917.	Last ann. div. % or per share.	Yield. %	Last Quotation	Rise or Fall.
	£					
African S.S.	20	30½—25½	10	7½	28	
Allan Line ... ... Deb.	100	—	4	4⅜	92	
Anchor Line ... Cum. pref.	10	9⅛—8⅞	5⅛	5⅛	9¼	
Do. ... ... Deb.	Stk.	105⅛—102⅛	4⅛	4⅛	103	
Argentine Nav. ... Cum. pref.	1	25/—14/3	6	5½	22/9	
Do. ... ... Ord.	1	20/6—6/6	Nil.	Nil.	16/9	+ -/3
Australasian Un. S. Nav. Deb.	Stk.	80⅛—79½	4	5	81	
Belfast Steam ... ... "A"	10 (5pd.)	—	5	5	5	
British & Argen. Nav. ... Deb.	Stk.	84—80	4⅜	5⅞	80½	
British India Nav. ... Deb.	Stk.	84—82	4⅛	5⅛	81¼	
British S.S. Invest. Trust Def.	Stk.	460—344½	50*	11⅛	427	
Do. ... ... Pref.	Stk.	105⅛—104	6	5⅞	102	
Do. ... ... Deb.	Stk.	74½—70	4⅛	6 3/16	72	
Cairn Line ... ... Deb.	Bds.	94—90	5	5½	90½-91	
Do. ... ... Ord.	1	51/6—40/9	20†	8	54/–	
Clan Line ... ... Ord.	10	55½—26⅝	25	5¼	44	—5
Court Line ... ... Ord.	£1	40/6—29/6	10	5⅛	33/4½	
Cunard SS. ... ... Ord.	1	85/—63/9	20*	5	83/-xd	+1/-
Do. ...Cum. pref.	Stk.	97⅜—82	5	5¼	85⅜	
Do. ... ... Deb.	Stk.	100—93¼	4⅛	4⅜	98	
Elder Line ... ... Deb.	Stk.	95—89	4⅛	4⅛	103	
Elder Dempster ... Cum. pref.	1	19/—17/–	5⅛	6⅛	19/–	
Do. ... ... Deb.	Stk.	89—85	5	5⅞	83⅛	+ ½
Ellerman Lines ... Pref. Ord.	10	9½—8⅜	6¼	6¼	9⅝	
Do. ... Guar. pref.	10	9—8½	4⅜	5⅛	8⅛	
France Fenwick ... Cum. pref.	5	95/3—85/–	5⅛	6⅛	87/6	
Furness, Withy ... Ord.	1	60/9—41/6	20*	6⅜	62/9xd	— -/3
Do. ... Cum. pref.	10	9—7⅜	5	5⅜	8½	— ¼
General Steam Nav. Ord.	1	24/9—21/6	10	7⅜	32/6	
Do. ... ... Pref.	1	19/4⅜—15/–	5	6⅞	15/6	
Houlder Line ... Cum. pref.	5	82/6—75/–	5⅜	6⅞	77/6	—2/6
Do. ... ... Deb.	Stk.	—	4⅜	4⅜	91	
Houlder Bros. ... Cum. pref.	5	—	5⅜	6⅛	4	
Do. ... ... Deb.	Stk.	—	4⅜	5⅛	82	
India Gen. Nav. & Rly. ... Ord.	10	11⅜—8⅞	6	5⅜	11⅜	+ ⅛
Indo-China N. ... Pref. Ord.	5	97/6—87/6	6	6¼	97/6	
Irrawaddy Flotilla	40	—	12½	5	100	
Khedivial Mail ... ... Ord.	1	40/—24/–	20	12½	36/6	
Do. ... ... Pref.	5	76/3—70/–	5⅛	7⅛	72/6	—5/-
Do. ... ... Deb.	Stk.	95⅛—93	4⅛	4⅜	94⅛	
King Line ... ... Ord.	1	42/6—31/6	12	5⅜	44/9	
Lamport & Holt ... Cum. pref.	£1	20/4⅛—18/–	6	6	19/4½	— -/3
Leyland (F.) ... Cum. pref.	10	8⅛—7¼	5	5⅞	8	
Mercantile SS. ... ... Ord.	5	30⅛—15	40	8	30½	
Do. ... ... Pref.	1	21/—15/9	5	6⅛	21/–	
Moor Line ... ... Ord.	10	35—20	30	6⅜	41	
Nelson Steam Nav. ... Deb.	100	—	5	5⅛	98½	
New Zealand ... ... Ord.	£10	—	8	2½	32½	
Do. ... ... Deb.	Stk.	87⅛—86⅜	4	4⅝	88⅜	
Nitrate Producers SS. ... Ord.	5	25⅜—20	30	6¼	24⅜	
Do. ... Cum. pref.	5	100/—90/–	5	5	5	
Oceanic Steam. Nav. ... Deb.	100	98⅛—84	4⅛	4⅜	94⅛	+ ⅝
Orient.Stm.Nav.Co. Cum. pref.	10	9⅛—8⅛	5	5⅛	9⅛	
Do. ... ... Deb.	100	92—88	4⅛	5⅛	88	
P. & O. S. N. ...Cum. pref.	100	93¾—84	5	5⅜	92	
Do. ... ... Def.	100	342—295	18	5⅜	333½	
Do. ... ... Deb.	Stk.	65⅛—63⅛	3½	5⅜	64	
Prince Line	1	6⅜—3 7/16	30	5¼	117/6	
R.M.S.P. ... ... Ord.	100	125—109½	7	5¼	119⅜	— ⅜
Do. ... ... Pref.	Stk.	85⅛—80	5	6	83⅜	
Do. ... ... Deb.	Stk.	86—79	4⅛	5⅜	79	
Shaw, Savill & Alb. Cum. pref.	5	87/6—80/–	5¼	5⅜	85/–	
Shell Transport ... ... Ord.	1	6¼—96/3	35	6⅞	5⅜	
Do. ... Cum. pref.	10	9⅜—9⅛	5	5⅜	9⅜	
Sutherland SS. Co.	£1	75/—50/9	30	5¼	101/–	
Union-Castle SS. Cum. pref.	10	7⅜—7¼	4⅛	6	7⅜	
Do. ... ... Deb.	Stk.	90—86	4	4⅛	89	
West Hartlepool ... ... Pref.	10	7⅜—7⅛	5⅛	7¼	7⅛	

INSURANCE.

Alliance	20 (2·4 pd.)	10⅛—9	12/-	7	9⅞	— ⅛
London Assurance	25 (12½ pd.)	60⅛—46¾	22	7	64¼	+ ⅜
Merchants' Marine Insurance ...	10 (2½ pd.)	10⅜—8⅛	10	6	10 5/16	
N. British & Mercantile Ord.	25 (6¼ pd.)	36—29	40/-	6⅜	34⅛	
Phœnix Assurance	10 (1 pd.)	7⅛—6	40	7	7⅛xd	— 5/16
Royal Exchange Assurance ...	Stk.	241⅛—187	10	4¼	251	
Sea Insurance	10 (2 pd.)	27⅞—24⅞	10	6	27	
World Marine, Limited ...	5 (2 pd.)	6⅛—55/-	10	8	6⅞	

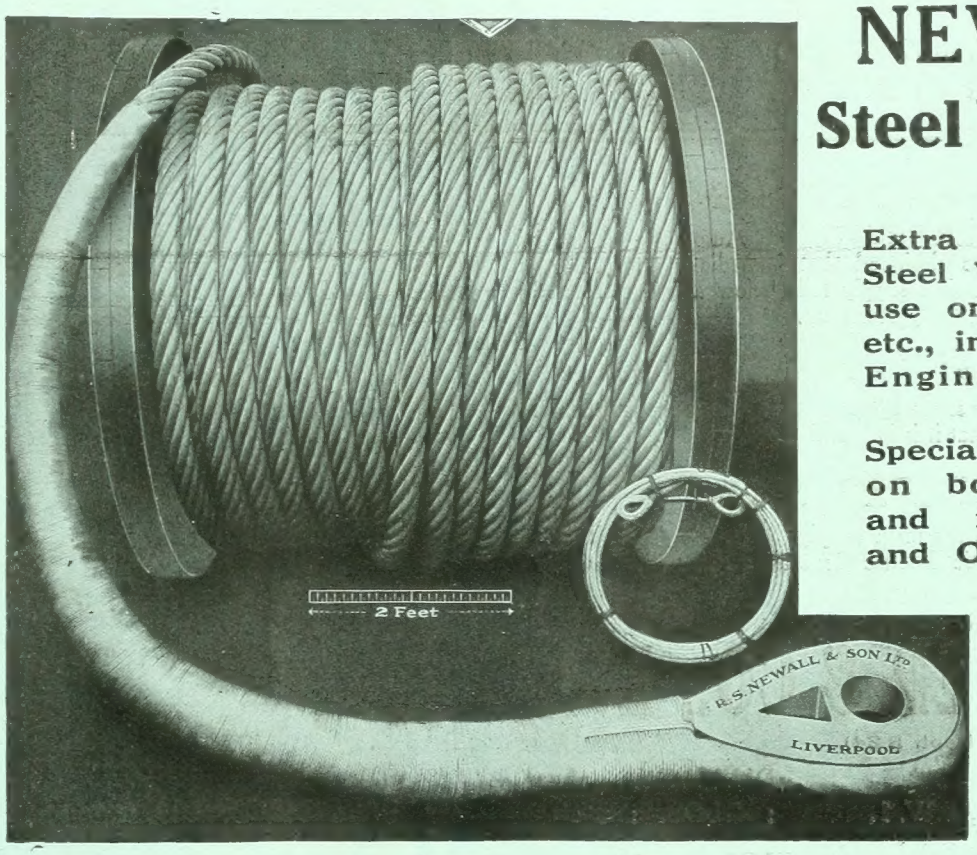
IRON AND STEEL.

Name.	Share and paid.	Extreme quotations, 1917.	Last ann. div. % or per share.	Yield. %	Last Quotation	Rise or Fall.
	£					
Babcock & Wilcox... ... Ord.	1	68/—52/6	15	4½	66/3	+1/3
Baldwins ... Cum. pref.	1	20/—15/-	5½	5½	20/-	
Do. ... ... Deb.	Stk.	84—82	4½	5⅛	84	
Bayliss, Jones ... Cum. pref.	1	—	5	7¼	11/16	
Bell Bros. ... ... Cum. pref.	10	10—9½	6	6	10	
Do. ... ... Deb.	Stk.	80—73¾	5	7	74	
Bessemer (Henry) ... Ord.	1	34/6—24/6	12½	7½	32/–	
Bolckow Vaughan ... Ord.	1	30/—22/2	11	7½	27/3	
Do. ... ... Cum. pref.	20	17¼—16⅜	5	5⅛	16/9	
Cargo Fleet Iron ... ... Ord.	1	24/9—17/3	3	2⅜	25/9	— -/4
Do. ... ... Deb.	100	84—81½	4⅛	5⅛	82	
Consett Iron Co. ... ... Ord.	1	36/3-24/10½	50	10	93/6	—2/9
Dominion Iron & Steel	Bds.	88⅛—71¾	5	7	73	
Dorman, Long ... ... Ord.	1	50/—30/9	8†	—	36/–	
Do. ... ... Deb.	Stk.	—	4	5½	71	
Ebbw Vale Steel & Iron Ord.	1	30/6—24/6	12½	9	29/6	+ -/4½
Guest, Keen & Nttefids Ord.	1	89/—62/6	15*	3¾	82/6	
Do. ... ...Cum. pref.	5	5⅝—5	5	4⅝	5 5/16	— 1/16
Do. ... ... Deb.	Stk.	79⅞—73¾	4	5½	77	
Hadfield's Steel Foundry Ord.	1	107/6—78/6	30	5½	100/6	—17/6
Ibbotson Bros.	5 (4 pd.)	7—6¼	7½	4¾	6¼	
Jessop (W.) & Sons ... Ord.	5 (4 pd.)	10—8	15*	6⅜	9¼	
Lanarkshire Steel Cum. pref.	10	—	5	7⅛	7	
Lysaght (J.) ... Cum. pref.	1	25/—20/–	6	6	20/–	
Do. ... ... 2nd pref.	1	19/9—19/4½	6	6	20/-	
Manganese Bronze ... Ord.	1	—	6	11	11/16	
Do. ... ... Cum. pref.	1	—	6	8	¼	
North-Eastern Steel ... Deb.	Stk.	—	4½	—	—	
Palmers Ship & Iron "A" ...	1	13/—9/9	Nil.	Nil.	13/9	
Scott (Walter) ... ... Ord.	1	29/4½—21/3	15	10⅝	29/–	
Do. ... ... Pref.	1	19/9—16/–	6	7⅜	19/9	
Sheffield Forge ... ... Ord.	1	—	15	4¼	70/–	
Shelton Iron & Steel ... Ord.	1	24/6-16/10½	7½	6	21/7½	
Do ... ... Deb.	100	91½—91	5	5½	91½	
S. Durham Steel & Iron Ord.	1	42/9—29/6	10	4¼	44/–	
Do. ... ... Cum. pref.	1	20/9-18/7½	6	6¼	20/9	
Do. ... ... Deb.	Stk.	81—80	4½	5⅝	80	
Steel Co. of Scotland ... Ord.	10	—	10	6¼	15½	
Stewarts & Lloyds Pref. ord.	10	17—16	10	6¼	16	
Do. ... ... Cum. pref.	10	—	6	4½	13⅛	
Stone (J.) ... ... Cum. pref.	10	8⅛—7⅛	5	6⅜	7 9/16	
United States Steel ... Ord.	100$	124—109½	8	7⅛	96¼	
Do. ... ... Cum. pref.	100$	—	7	7¼	114¼	
Vickers Ltd. ... ... Ord.	1	44/6—35/3	12½	5⅝	43/1½	+ -/7½
Do. ... ... Pref.	Stk.	84—81	5	6	82	
Do. ... ... Deb.	Stk.	79—74⅛	4	5 3/16	76	
Weardale Steel ... Def. ord.	1	32/3—23/–	19½	13½	29/–	
Do. ... ... Cum. pref.	1	25/3—18/9	8	5½	24/9	
Do. ... ... Deb.	Stk.	—	4	6½	82	
Workington Iron & Steel Ord.	1	30/3—21/–	10	6⅞	28/9	

SHIPBUILDING AND MARINE ENGINEERING.

Armstrong, Whitworth Ord.	1	45/—36/–	12½	5¾	42/6	
Do. ... ... Cum. pref.	5	73/9—67/–	4	5⅞	67/6	
Do. ... ... Deb.	Stk.	78—73	5	6⅝	75⅛	
Beardmore (W.) ... ... Deb.	100	93—89	4⅛	5	90	
Brown (John) ... ... Ord.	1 (15s. pd.)	29–/—22/9	12½	7	27/6	
Do. ... ... Cum. pref.	10	8⅞—7⅞	5	5⅜	8⅜	
Cammell Laird ... ... Ord.	5	7⅞—6⅜	10	7⅛	6⅜xd	
Do. ... ... Cum. pref.	5	85/6—74/6	5	6⅞	76/10½	—4/7½
Do. ... ... Deb.	100	83⅜—79⅛	4⅛	5⅛	84	
Dunlop (Jas.) ... ... Ord.	1	28/9—16/–	10	9⅜	22/3	
Do. ... ... Cum. pref.	1	18/9—16/6	6	7⅛	17/6	
Fairfield Shipbldg Cum. pref.	10	8¾—8¼	6	7⅛	8⅜	
Fleming & Ferguson ... Ord.	10	—	10	7	14½	
Gray (Wm.) ... ... Deb.	100	100—95⅜	4⅛	4⅜	97⅛	
Hawthorn (R. & W.) Leslie Ord.	1	—	12½	6¼	40/6xd	
Henderson (D. & W.) Cum. pref.	1	—	5	9	7/16	
Richardsons Westgarth Ord.	1	10/3—5/–	Nil.	Nil.	9/5½	— -/6¾
Do. ... ... Cum. pref.	1	19/9—12/6	Nil.	Nil.	18/3	
Do. ... ... Deb.	Stk.	67—62	4½	6⅞	66	
Simons (W.) ... Cum. pref.	10	—	5	5	9 1/16	
Swan, Hunter & W. R. ... Ord.	1	51/—33/6	12½	5⅜	56/6	
Do. ... ... Cum. pref.	1	17/3—17/–	5	5⅝	17/–	
Do. ... ... Deb.	Stk.	78—77	4½	5⅜	77	
Thornycroft (John I.) ... Ord.	1	45/—16/–	17½	8¼	40/–	—1/
Do. ... ... Cum. pref	1	19/—16/–	6	6⅝	18/6	
Do. ... ... Deb.	100	—	5	5⅜	82	
Wallsend Slipway ... Ord.	1	2—1⅛	10	2¾	72/6	
Do. ... ... Cum. pref.	1	1—1	5	5	1	

* Including bonus. † Also 20 % in shares. ‡ Treasury price.



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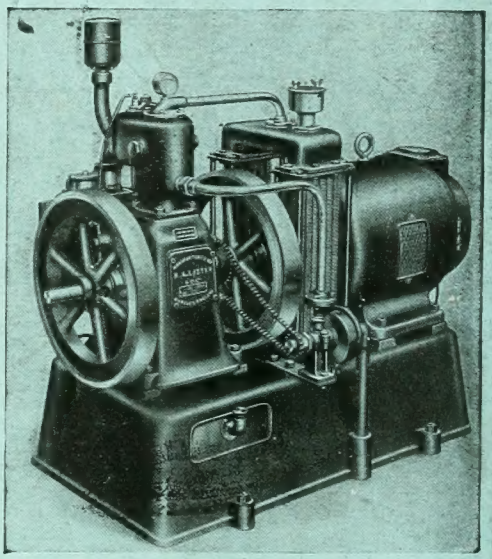

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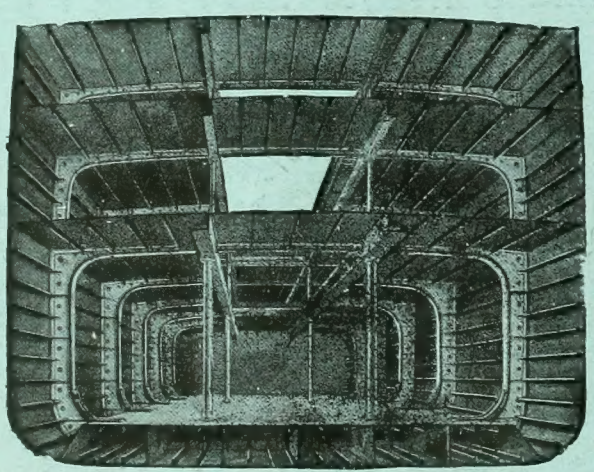

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London: Printed by HARRISON & SONS, Printers in Ordinary to His Majesty, 45, 46, and 47, St. Martin's Lane, London, W.C. 2, and published by TRANSPORT (1910) LIMITED, Proprietors of SHIPBUILDING AND SHIPPING RECORD, at Queen Anne's Chambers, Westminster, London, S.W. 1. *May 2, 1918.*